ARS ISLAMICA

ARS ISLAMICA

THE RESEARCH SEMINARY IN ISLAMIC ART · INSTITUTE
OF FINE ARTS · UNIVERSITY OF MICHIGAN · VOL. IX

ANN ARBOR
UNIVERSITY OF MICHIGAN PRESS
MCMXLII

PRINTED IN U.S.A. BY THE ANN ARBOR PRESS

CONTENTS

ERNST HERZFELD . . . . . Damascus: Studies in Architecture—I 1

R. B. SERJEANT . . . . . Material for a History of Islamic Textiles up to the Mongol Conquest 54

WOLFGANG BORN . . . . . Ivory Powder Flasks from the Mughal Period . . 93

RICHARD ETTINGHAUSEN . Painting in the Fatimid Period: A Reconstruction . 112

. . . . . The Writings of Ananda K. Coomaraswamy . . 125

NOTES

HENRY FIELD and EUGENE PROSTOV . . . Excavations in Uzbekistan, 1937–1939 143

DONALD N. WILBER . . . . "Pagan and Christian Egypt." An Exhibition . . 150

GEORGE H. MYERS . . . . The Dating of Coptic Textiles in the Light of Excavations at Dura-Europos 156

NANCY PENCE BRITTON . . Pre-Mameluke Ṭirāz in the Newberry Collection . 158

A. H. CHRISTIE . . . . . Two Rock-Crystal Carvings of the Fatimid Period 166

L. A. MAYER . . . . . A Hitherto Unknown Damascene Artist 168

BOOK REVIEWS 169

IN MEMORIAM 235

Editor

RICHARD ETTINGHAUSEN

Consultative Committee

†LAURENCE BINYON
ANANDA K. COOMARASWAMY
K. A. C. CRESWELL
MAURICE S. DIMAND
ALBERT GABRIEL
ERNST HERZFELD
†JOHN E. LODGE
L. A. MAYER
ALEXANDER G. RUTHVEN
GASTON WIET
JOHN G. WINTER

EDITORIAL OFFICE: RESEARCH SEMINARY IN ISLAMIC ART, INSTITUTE OF FINE ARTS
UNIVERSITY OF MICHIGAN, ANN ARBOR, MICHIGAN, U.S.A.

DAMASCUS: STUDIES IN ARCHITECTURE—I

BY ERNST HERZFELD

> L'archéologie est à la nature sociale ce que l'anatomie comparée est à la nature organisée. Une mosaïque révèle toute une société, comme un squelette d'ichthyosaure sous-entend toute une création. De part et d'autre, tout se déduit, tout s'enchaîne. . . . De là vient le prodigieux intérêt qu'inspire une description architecturale.
>
> —Balzac, *La Recherche de l'absolu*

The materials here presented—monuments and inscriptions—were surveyed and collected between 1908 and 1930 as part of a broader project, sponsored by the Institut de France, that of van Berchem's *Matériaux pour un Corpus Inscriptionum Arabicarum.* The survey of the province of Syria, entrusted to my late friend Moritz Sobernheim and myself, was begun at Aleppo and carried south to Damascus. By the spring of 1914 the work at Aleppo was finished; but the war, the deaths of M. van Berchem and M. Sobernheim, and years of other explorations on my part prevented the completion of the Aleppo volumes, in manuscript form, until 1937. The survey of Damascus—and of Hama, Ḥimṣ, and a few smaller places—remained on the whole incomplete; it was almost complete for the most interesting period, that of the crusades. Since I saw no way of publishing this material as a separate volume, I am availing myself of the opportunity offered by the Editor of *Ars Islamica* to bring out at least the most important part in this journal.

I have chosen about eighty monuments, adding some from more eastern provinces of the Muhammadan world, all of them entirely unknown or only partly known. In publishing these in a periodical rather than in the *Matériaux pour un Corpus Inscriptionum Arabicarum,* as originally intended, problems in the manner of presentation have arisen. Certain conventions in form and disposition and a method for handling such material has been developed in the *M.C.I.A.* These have had to be modified in order to conform to the style of the journal, and a good deal of epigraphical detail has had to be omitted.

Furthermore, the material which would have been arranged in the *M.C.I.A.* in strictly chronological order, as the monuments of a certain town, is here organized in sections such as "The Muḳarnas Dome," "The Syrian Madrasa," "The Turba," and "The Mosque," since the purpose of the present article is to make a contribution to our knowledge of the development of these forms and not to give a description of Damascus between the years 1100 and 1300. At the same time, since the monuments are more or less unknown, it was necessary to give information concerning them, in order that students may use the material as a basis for further research. Thus, descriptive detail beyond the immediate scope of the article had to be included, and this had to be done in the shortest possible form, because it interrupts the sequence of analysis and conclusions. From such considerations a rather complex disposition results.

Except in some cases where it was not necessary to give it in the full form, a regular pattern has been followed. Each monument, where it first appears, is introduced by a heading, which gives the name. This is followed by (*a*) the topographical situation, numbers of photographs and drawings, former publications where such exist, and sometimes the explanation of the name; (*b*) quotation of passages from chronicles referring to it, with brief explanatory notes; and (*c*) inscriptions, numbered continuously throughout the article, preceded by short epigraphical indications, and followed by translations restricted to their material contents.

After each descriptive insertion, the general discussion is resumed. So far as the typographical conventions of the journal have permitted, I have tried to make this arrangement clear by the use of different sizes and kinds of type.

My intention has been to submit new materials for study and to group them in such a way as to bring out the far-reaching problems which they contribute to solve. I hope these few preliminary remarks will facilitate the reading by indicating the general plan of organization.

Mūristān Nūrī, Hospital of Nūr Al-Dīn, Damascus

(*Figs. 1–6, 42–44, 46, 48, 54–56, 75–77*)

The Wissenschaftliche Veröffentlichungen des Deutsch-Türkischen Denkmalschutz-Kommandos [1] merely mentions the Mūristān Nūrī in its list. The *Monuments historiques de Damas,*[2] by J. Sauvaget, gives a short description and a sketch plan under No. 19. One may say that this monument, ranking with the Great Mosque and the Citadel as one of the most important Muhammadan buildings of Damascus, is virtually unknown.

The mūristān (for māristān, from Persian bīmāristān, "infirmary"; the Arabic would be dār al-shifa', "house of healing, sanatorium"; in Iraq the Persian term khastakhāna, "infirmary," is used) is an Iranian institution introduced into Iraq and Syria before the khānḳāh, "hospice," and long before the madrasa, "college."

Maḳrīzī reports that al-Walīd founded the first māristān at Damascus in 88 H.[3] In 205 H., in a letter to his son 'Abd Allāh, Ṭāhir Dhu 'l-Yamīnain writes: "Found houses for the sick Muslims where they shall find protection, medicines, ..." [4] Ahmed b. Ṭūlūn converted a palace into a māristān, the oldest in Cairo, in 259 H.

Al-Bīmāristān al-Nūrī built by Nūr al-Dīn inside of the Bāb Anṭākiya . . . . Nūr al-Dīn ordered the physicians to find out the healthiest quarter of Aleppo for building a hospital there. They slaughtered a sheep, cut it into four parts, and hung them up during one night in four quarters of the town. Next morning, they found the quarter of the sheep hung up in that quarter of the town smelling better than the others, and the hospital was built there.[5]

Ibn Buṭlān, a Christian physician, in a letter to Hilāl al-Ṣābī describing his visit to

[1] K. Wulzinger and C. Watzinger, *Damaskus, die islamische Stadt* (Berlin, 1924), II, 70.

[2] Beyrouth, 1932.

[3] Maḳrīzī, *Khiṭaṭ* (Bulaq, n.d.), IV, 250 f.

[4] *Kitāb Baghdād,* fol. 20b f.

[5] Muḥibb al-Dīn Muhammad ibn al-Shiḥna, *Al-Durr al-Muntakhab fī Tārīkh Mamlakat Ḥalab* (Beyrouth, 1909), p. 230. This edition of one manuscript of a late redaction of the original has been translated by J. Sau-

Aleppo in 440 H. says: "In the city are a Great Mosque, six churches, and a hospital; the inhabitants drink rain water collected in cisterns." [6]

Nu 'aimī [7] reports older sources:

The quarter "Goldstone" reaches from the Bāb al-Barīd [west-gate of the Umayyad Mosque] to the Māristān of Nūr al-Dīn and the Sha'mīya extra muros . . . . Goldstone is next to the great hospital and beyond . . . .

Sunday, 10 Ṣafar 549 (April 25, 1154), Damascus capitulated to Nūr al-Dīn. [Then, in the text, follow his first measures, viz., abolition of taxes, and] he constituted as waqf the Dār al-Shifā' [and built bridges and other institutions for public welfare.] [8]

Ibn al-Athīr writes: "Nūr al-Dīn [whom he calls 'lord of Syria, Mesopotamia, and Egypt'] built bīmāristān (hospitals), in all his lands." [8a] Likewise, Saladin, having liberated Jerusalem, at once built a bīmāristān and a madrasa there. Nūr al-Dīn Maḥmūd b. 'Imād al-Dīn Zengī b. Abū Sa'īd Aḳsonḳor, the Zengid, of Turkish origin, predecessor of Ṣalāḥ al-Dīn Yūsuf b. Ayyūb, the Ayyubid, of Kurdish origin, is a less spectacular figure and hence less known to the Occident, but a greater personality and of greater historical consequence than even Ṣalāḥ al-Dīn. The crusaders called him Noradinus, his successor Saladinus.

Inscription 1

On a sacramental table of white marble, horse-shoe in shape, and put into the wall of the east īwān, partly covered (in 1914 and 1930) by an intermediate ceiling of wood there is an inscription consisting of one line border, four lines field. The partial readings of van Berchem (1894), Sobernheim (1914), and myself (1930) give the following text, the words in the two gaps were supplied from the *Répertoire*[9]:

بسمله . . . هذا ما أمر باتمام عمارته العبد الفقير الى الله فى سعة رحمته لا للتجاوز فيه بل للمقام (border)

به مدّة الأجل المحصى والعمر المقدر المقضى وذلك فى سنة تسع واربعين وخمس مائة 1. مولانا الملك

العادل العالم 2. [العارف الزاهد نور الدين] 3. ركن الاسلام و المسلمين أبو القسم 4. محمود بن زنكى بن

اقسنقر ناصر أمير المؤمنين (field)

vaget, "Les Perles choisies d'Ibn ach-Chiḥna," *Mém. de l'inst. franç. de Damas* (Beyrouth, 1933). For my studies of the history of Aleppo I have used copies of passages of the original manuscripts of Ibn Shiḥna and his sources, Kamāl al-Dīn ibn al-'Adīm and 'Izz al-Dīn Muhammad ibn Shaddād, in St. Petersburg, London, and Paris. The Beyrouth edition is here quoted as *Durr*.

[6] Yāḳūt, *Mu'djam al-Buldān*, ed. F. Wüstenfeld (Leipzig, 1866–73), II, 305; cf. G. Le Strange, *The Lands of the Eastern Caliphate* (Cambridge, 1905), p. 363.

[7] Muḥyī al-Dīn al-Nu'aimī, *Irshād al-Dāris*. MS Schefer, written about 900 H. abridged (mukhtaṣar) and annotated by 'Abd al-Bāsiṭ al-'Ilmāwī, before the middle of the tenth century. Nu'aimī draws from Ibn Shākir, Ibn Shuḥba, al-Dhahabī, Bahā al-Dīn ibn Shaddād and other authors of the Ayyubid period. Only a translation of al-'Ilmāwī has been published, with many notes, by H. Sauvaire, "Description de Damas," *Journ. asiatique*, IX sér., vols. 3–7 (1894–96), quoted here as *JA.*, 1894, etc.

[8] The passages quoted above are *JA.*, 1896, pp. 379 and 382; *JA.*, 1894, p. 289.

[8a] Ibn al-Athīr, *Chronicon* . . ., ed. C. J. Thornberg (Leyden, 1851–76), XI, 267.

[9] *Répertoire chronologique d'épigraphie arabe*, ed. E. Combe, J. Sauvaget, and G. Wiet (Cairo, 1931), VIII, No. 3164. The inscriptions of the sixth and seventh centuries are contained in volumes VIII and IX.

To discuss the protocol and the religious style of the inscriptions is the task of the *Corpus Inscriptionum Arabicarum,* and it is not attempted here. The objective contents of this inscription are: "The completion of the building was ordered by Nūr al-Dīn in 549" (1154 A.D.).

The inscription is written on an antique patina, Syriac patūkhē, a so-called "sigma-shaped table," of which several have been reused in Syrian mosques, e.g., in the Darwīshīya of Damascus, the Great Mosques of Hama and Ḥimṣ. One such table Ibn al-'Adīm [10] describes as the main treasure of the Madrasa al-Ḥalāwīya, the former cathedral of Aleppo:

They show in the Madrasa al-Ḥalāwīya an altar on which the Christians used to sacrifice, of royal transparent marble, a stone of exquisite beauty: when a candle is placed under it, one sees its light shining through. We were told that Nūr al-Dīn had it brought from Apamea in 544 [when the building was converted into a madrasa]. The stone bears a Greek inscription which they translated for us: "This has been made for the emperor Falṭiyānūs, aquila is at 14° from scorpio," which would give 3000 years elapsed before Nūr al-Dīn. They tell that Nūr al-Dīn used to stuff the professors with sweets, ḥalāwī [hence the name of the madrasa], with which this djurn, basin, of marble was filled . . . . And Daḳiyānūs is the last emperor of Rome, said to have ruled twenty years.[11]

To these passages of Ibn al-'Adīm, Ibn Shiḥna remarks:

I have seen the marble, but it is no djurn; djurn is a hollow stone used for ablutions or to put something in it, while this is flat, rather long and broad, square or somewhat oblong, with only the border slightly raised, two or three fingers high. He (Ibn al-'Adīm) says—Allah forgive him!—it was made for the emperor Falṭiyānūs, but in the passage following the translation he speaks of Daḳiyānūs [Decius, 249–51 A.D.]. Whether the first or the second name be right, at any rate he gives two different names. Ibn Shaddād and Ibn al-Khaṭīb,[12] too, use the (wrong) term djurn. Perhaps he meant to write Daḳlatiyānūs [Diocletianus] and has omitted the initial *d,* but with its *l* and *ṭ,* the name cannot be Daḳiyānūs.

This is a good piece of medieval criticism: the sigma-shaped sacramental table certainly bore an inscription of Diocletian.

The *Répertoire* (No. 3310) gives an inscription: "Māristān Nūrī à Damas: sur la porte d'entrée, deux bandes de laiton sur chacun des vantaux, longueur 80 + 80 etc.," without date, but arranged under the "year 569." There is no such inscription, and the headline must be an error for Madrasa al-Nūrīya.

A long inscription over the wall of the second door behind the big cupola, copied in 1894

[10] Kamāl al-Dīn 'Umar ibn al-'Adīm, of the family Banu 'l-Djarrāda, 'Uḳailī Arabs, 588–660 H., author of *Bughyat al-Ṭalab fī Tārīkh Ḥalab*; inscription in his name, as vizier, on the mihrab of the Ḥalāwīya, Aleppo (see *Encycl. Islām* [= *EI*], s.v. Kamāl al-Dīn).

[11] *Durr,* p. 103.

[12] 'Izz al-Dīn Muhammad b. Ali ibn Shaddād, author of *al-A'lāḳ al-Khaṭīra fī Dhikr Umarā' al-Sha'm wa 'l-Djazīra,* died in 684 H., cf. M. Sobernheim, "Ibn Shaddāds Darstellung der Geschichte Baalbeks im Mittelalter," *Centenario Amari* (Palermo, 1910), II, 152 ff. The relation between Ibn Shaddād and Ibn al-'Adīm has not been sufficiently investigated. 'Alā al-Dīn Ali ibn al-Khaṭīb al-Nāṣirīya, extracts and continues the work of Kamāl al-Dīn, under the title *al-Durr al-Muntakhab fī Tārīkh Ḥalab* (d. 843 H.). See *EI,* s.v. Kamāl al-Dīn.

by van Berchem, quotes from the waqf document of Nūr al-Dīn and goes on: "What was out of repair of its building and of its waqf was replaced by the sultan Ḳalā'ūn in 682 H. (1283 A.D.)." [13] The little fountain to the right of the entrance was added at that occasion.

Ibn Djubair, traveler from Spain, who visited Damascus in Rabī' II 580 (July–August 1184), reports:

> There are about twenty madrasas in Damascus and two hospitals, the old and the new; the latter is the larger and better built of the two [that of Nūr al-Dīn]. It has fifteen dinar (gold) daily revenue. There are physicians to attend the sick, and the expenses of food and medicine are provided. The old māristān, equally endowed .... lies west of the Great Mosque.[14]

The old one may be the māristān of al-Walīd. The sum of 5,475 pounds a year was a rich income in those days.

The building (*Figs. 1* and *42*) surrounds a rectangular court, proportion 2:3, with the typical tank in the middle, and has four open rooms covered by barrel vaults, īwān, on the main axes, the perfect type of the "cruciform plan," the origin of which has been the subject of study and doubt.[15] The inscriptions on the dado of the east īwān are quotations from the Koran:

> An announcement has come to you from your Lord and a remedy for the evil that is within you (X, 59). From the entrails of the bees comes a liquor of various colors [or kinds], it contains a remedy for man (XVI, 71). It is Allah that has created me, that leads me on the right path, it is He that nourishes me and allays my thirst, it is He that heals me when I am ill (XXVI, 78–80).

The verses show that those rooms were the consulting rooms of the physicians. The four large rooms in the corners, with cross vaults, and two small rooms at the sides of the north and south īwān may have been wardrooms.

The lavatories with running water, accessible from the domed room in the doorway, surround a little court containing a tank, once vaulted over except for a large impluvium. Those in Nūr al-Dīn's mosque at Hama and in Mashhad al-Muḥassin, Aleppo, are arranged in the same way; of Mashhad al-Muḥassin the chronicles say: "Under the reign of Nūr al-Dīn and on his order, a cistern, ṣihrīdj,[16] was built in the court and lavatories with many cabinets, to the great comfort of those who lived there." Ibn Djubair observes: "There are at Damascus about a hundred hot baths and forty public lavatories, with running water in all of them." [17] Wherever one sees them, one recognizes them at once as works of the period of Nūr al-Dīn, and only those in Mashhad al-Ḥusain, Aleppo, built between 613 and 634

[13] *JA.*, 1896, pp. 411 f.

[14] Ibn Djubair, *Travels,* ed. W. Wright (Leyden, 1852), p. 285.

[15] K. A. C. Creswell, "Origin of the Cruciform Plan of the Cairene Madrasas," *Bull. de l'inst. franç. d' arch. or.,* XXI (1922).

[16] "Ṣihrīdj wa-mīḍāt fīhā buyūt kathīra," cf. *Indices, Glossarium et Addenda* . . . ., ed. M. J. de Goeje, *Bibliotheca Geographorum Arabicorum* (Leyden, 1879), IV, gloss. s.v. "siḳāya, siḳāya kabīra, ay lil-wuḍū' fīhā 'addat min al-buyūt, ay al-akhliya."

[17] Ibn Djubair, *op. cit.,* p. 291.

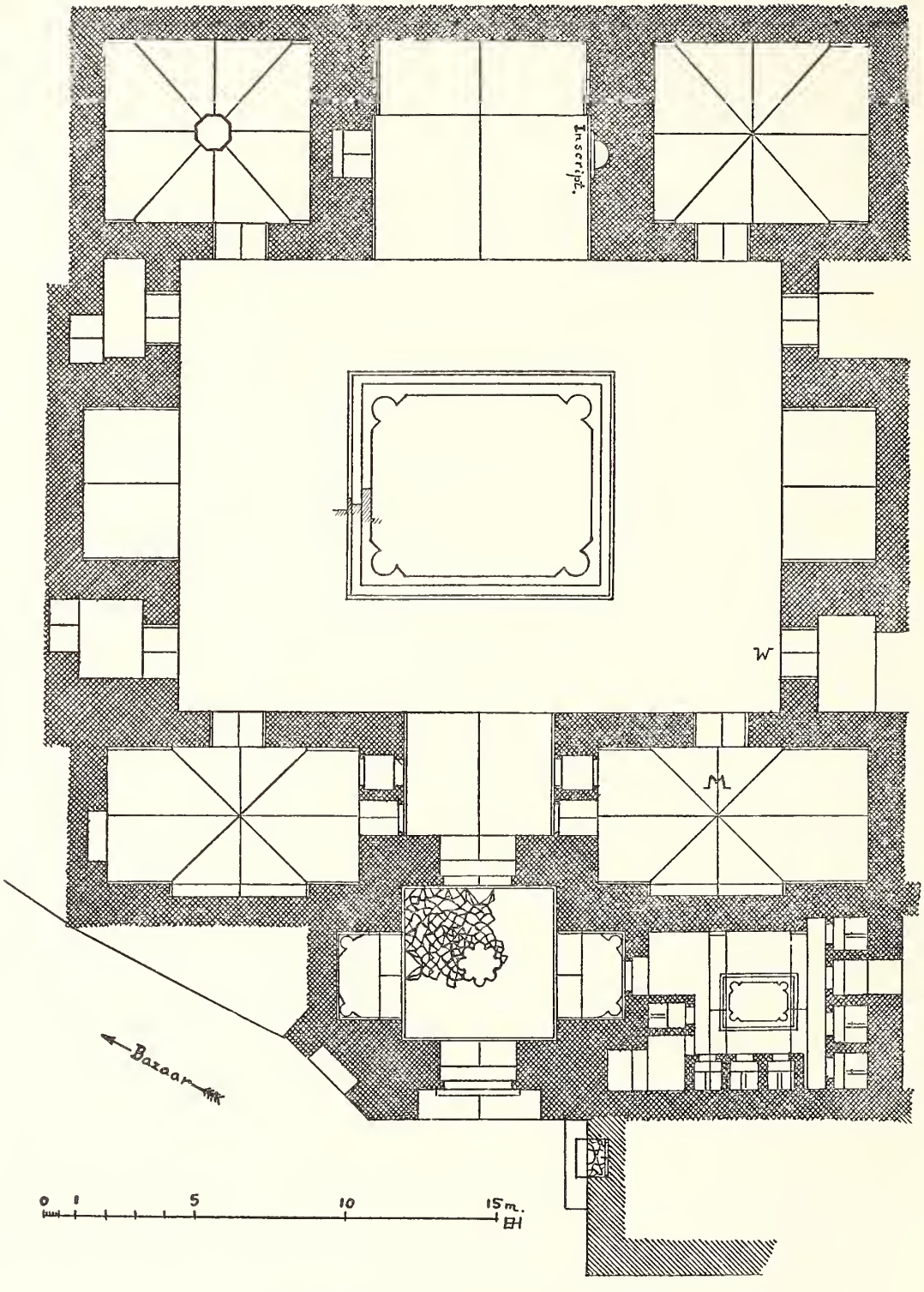


FIG. 1—DAMASCUS, MŪRISTĀN NŪRĪ. PLAN

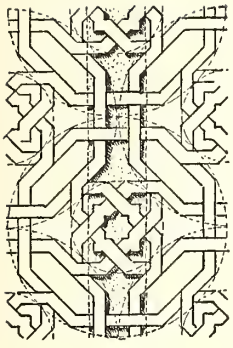


FIG. 2—DAMASCUS MŪRISTĀN NŪRĪ FRAME AROUND VAULT OVER ENTRANCE

by the cadi Bahā al-Dīn ibn al-Khashshāb, surpass them. To use Ibn Djubair's words, they are a palace among palaces.

It seems, however, that this was not the whole building, but that there was an annex built around a second court to the south, for apparently not only the lavatories, but the main court communicated through doors with the area south of the present building.

The main entrance on the street (*Figs. 3* and *43*) has a most unusual vault over a bay whose depth is only one-quarter of its width, the vault itself being a semidome with its depth reduced to half its radius. I believe such a flattened vault is unique. Sauvaget says: "Il n'est pas certain que le décor d'alvéoles (du portail) date de la construction primitive."[18] There is no doubt that it does. The remains of an ornamental frame on the three sides of the spandrel are also original (*Fig. 2*). It is a rather simple interlaced design. As in third-century examples from Samarra, the border—in principle a one-dimensional design (that is extensible in one direction only)—is cut out of a two-dimensional one (extensible in two dimensions) in such a way that one short and one long element alternate like the beads of a Greek astragal.

The same type of dome, fully developed, covers the monumental room behind the first door (*Figs. 4* and *44*). It rises over a pair of semidomes covering the deep recesses in the north and south walls; the scheme is like that traceable fifty years earlier in the tomb of Ṣafwat al-Mulūk.[19] A second door separates this room from the west īwān on the court. Both doors, including the knockers (*Fig. 48*), belong to the first period of the building. The outer one (*Fig. 46*) is decorated with nail heads, an ornamentation with a long history. The design is richer, although the heads themselves are simpler, than that on the door of the Madrasa al-Shādhbakhtīya, Aleppo, built by a lieutenant of Nūr al-Dīn in 589. There, a similar knocker bears a contemporary inscription (*Figs. 49* and *50*). Figure 47 gives specimens of such gilded nails as were used in Samarra; the nail heads from Persepolis are of gold. The inner door has wood carvings of dove-tailed panels (*Fig. 54*) of the same type as the mihrab of Nūr al-Dīn in the maḳām Ibrahīm, Aleppo citadel (*Fig. 53*) and his mimbar in the Aḳṣā, Jerusalem.

In addition to the inscribed marble slab, the east īwān has a dado, about 1 m. high, of yellowish marble which bears incised inscriptions in magnificent Neskhi, incrusted with black paste. This style is peculiar to contemporary buildings at Mosul, where the indigenous soft alabaster and asphalt, both generally used for building purposes since the Assyrian epoch, lend themselves to such a decoration. Nūr al-Dīn's father, Zengī, was the builder of medieval Mosul. Ghāzī and Mawdūd, brothers of Nūr al-Dīn, ruled there, and under Nūr al-Dīn, that special Mosul style spread to the west, to the "Lower maḳām Ibrāhīm," Aleppo citadel,[20] to the Djāmi' Nūrī at Hama, and to Damascus.[21]

[18] Sauvaget, *Monuments historiques de Damas*, p. 50.

[19] A plan of this monument will be found in the next installment of this study.

[20] Illustrations of this monument will be found in the next installment of this study.

[21] F. Sarre and E. Herzfeld, *Archäologische Reise im Euphrat-und Tigris-Gebiet* (Berlin, 1911–20), chapter Mosul, sanctuaries of 'Awn al-Dīn, of Abu 'l-Ḳāsim Yaḥyā. This book is hereinafter referred to as *Arch. Reise*.

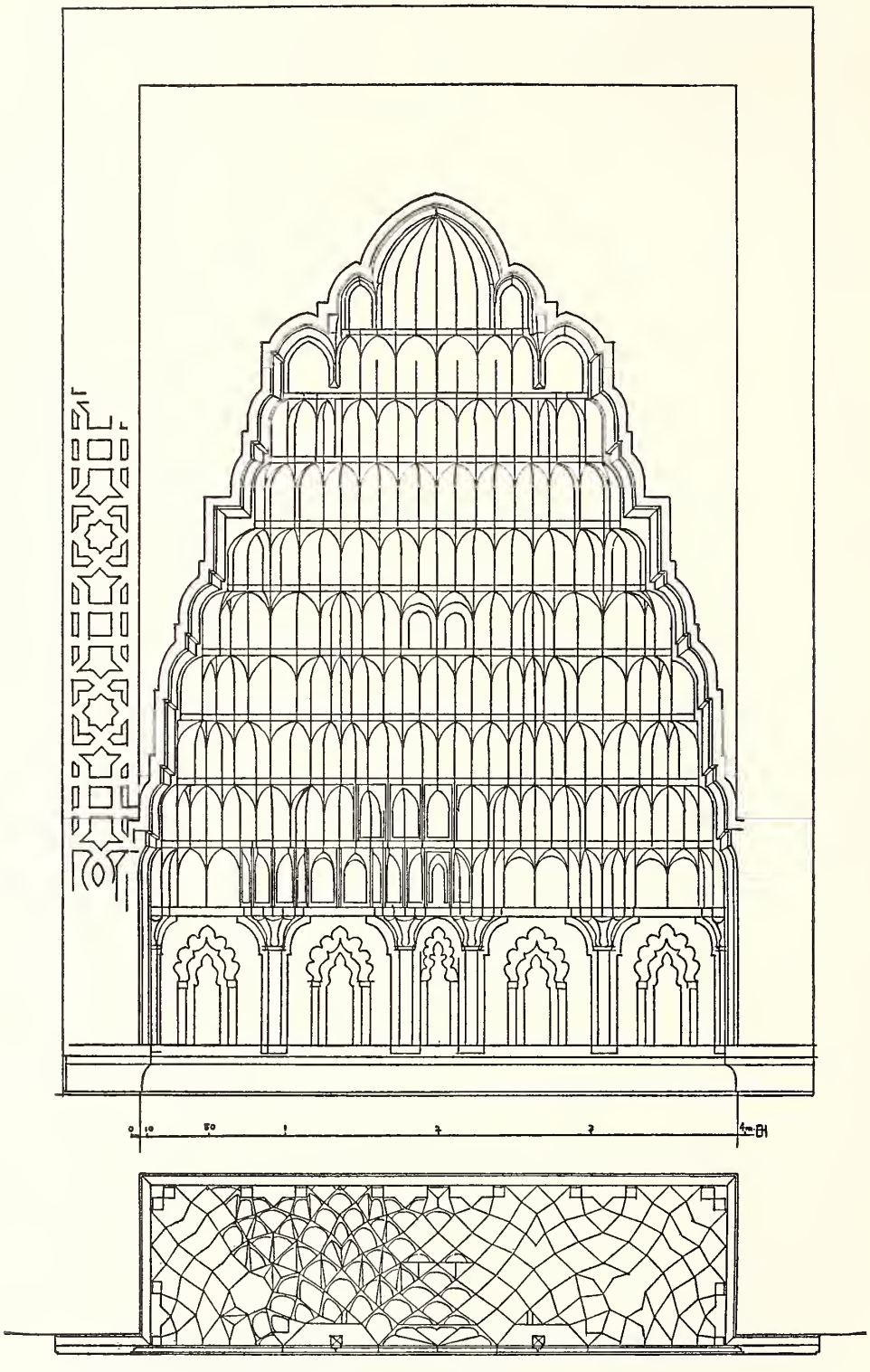


Fig. 3—Damascus, Mūristān Nūrī, Vault over Entrance Bay

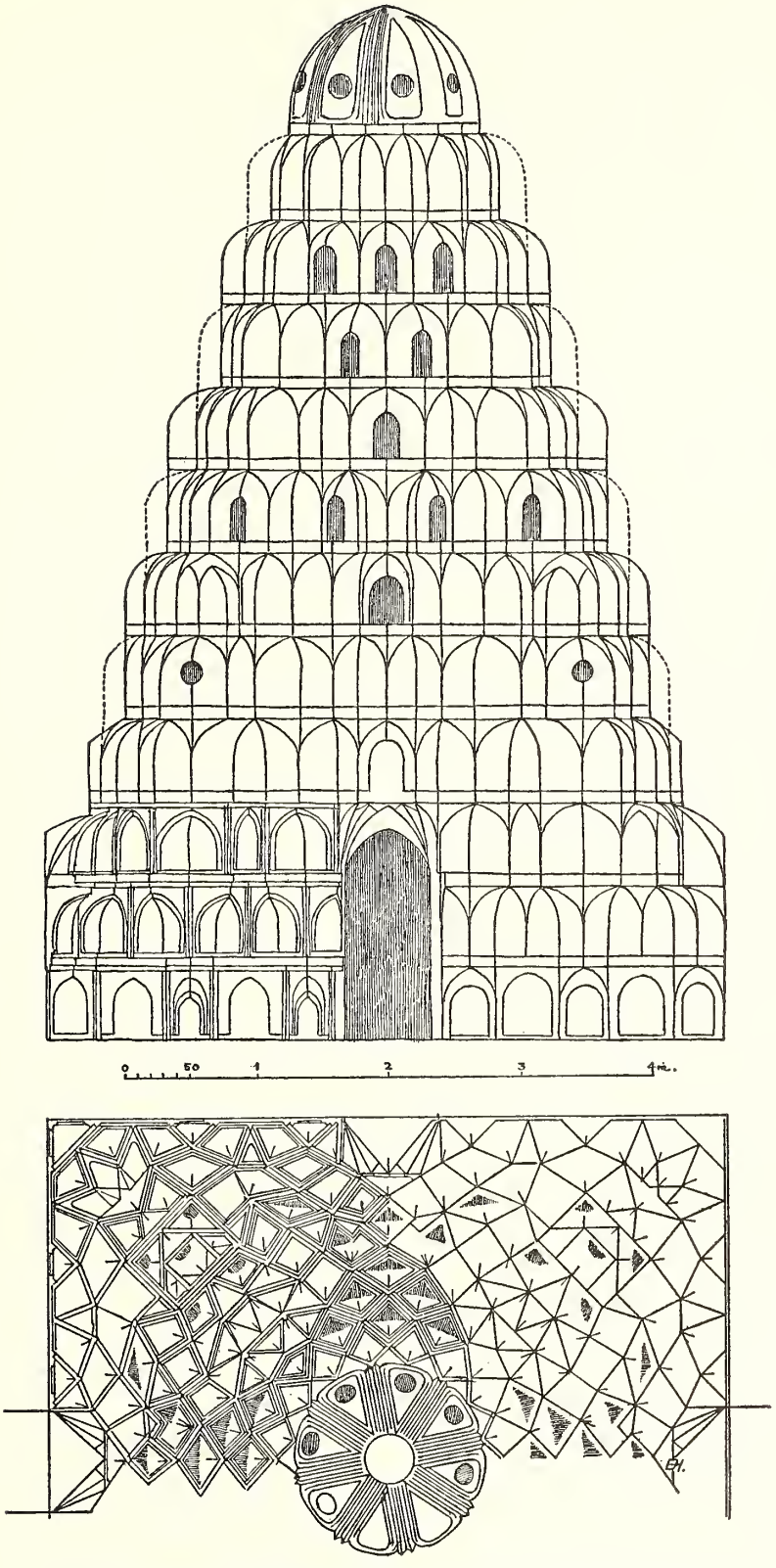


Fig. 4—Damascus, Mūristān Nūrī, Dome over Entrance Hall

A window screen over the door in the southwestern corner of the court, wrought in perforated stucco (*Fig. 5*), is proved to belong to the original building by a comparison with much richer examples, dated 599 H., in the Ḥanābila Mosque at Ṣāliḥīya.[22]

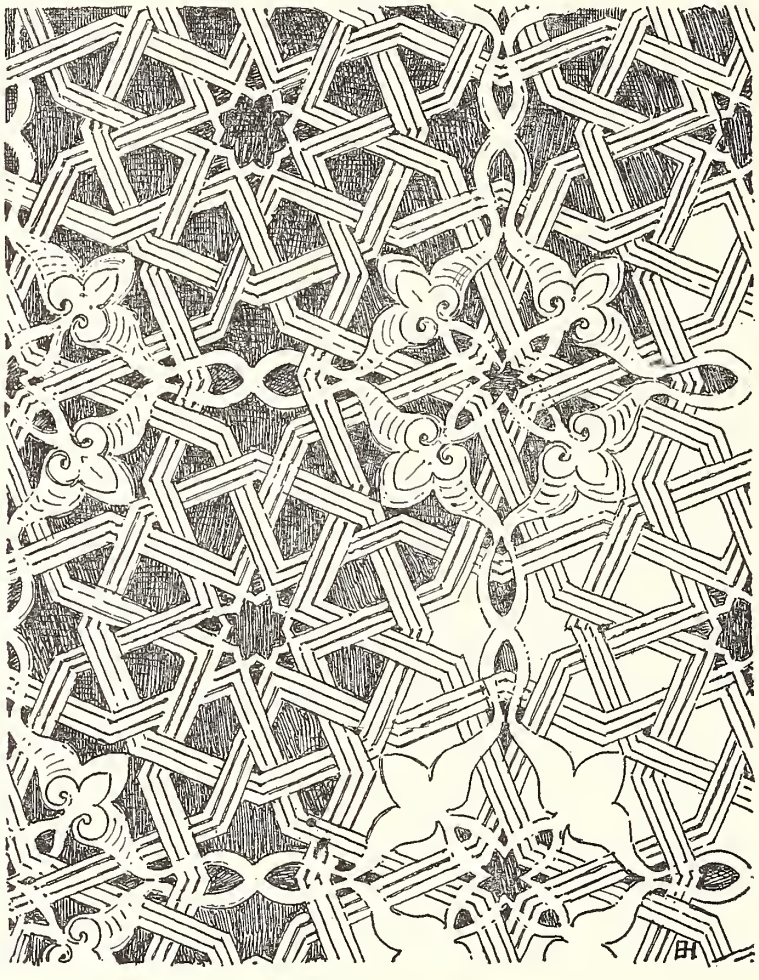


Fig. 5—Damascus, Mūristān Nūrī, Stucco Window

Only the decoration of one room [23] belongs to the restoration of Ḳalā'ūn in 682. Some sacramental tables, one of them used as a mihrab (*Figs. 55* and *56*) were subsequently carved with the rich vine scrolls, which are typical of the period of Baibars and Ḳalā'ūn. Identical decoration enriches the interior of their madrasa-turba, the Ẓāhirīya at Damascus, others in the Berlin Museum came from Baalbek.[24] The late date is also indicated by the fleur-de-lis,

[22] The screen will be illustrated in the next installment of this study.

[23] My note says: Chamber, right of entrance, on the courtyard. But Sauvaget speaks of "the south īwān." It may be that the īwān was temporarily closed when I made the note in 1914.

[24] In the Islamische Abteilung der Staatlichen Museen, Berlin. A fragment of this late ornamentation was

a Mameluke coat-of-arms (*Fig. 6*), which appears also on the Bāb al-Faradj, city gate of Damascus, and over the door of the Darwīshīya, Ḥimṣ, where it was reused in the building of 841 H. (*Figs. 7–9*).

Thus, except for the decoration of one room and for the fountain added on the front, the building as it exists today is integrally that erected in 549. This fact raises two momentous problems: the provenance of the domes, and that of the cruciform plan, and these two problems must be solved.

Fig. 6—Damascus Mūristān Nūrī

Fig. 7—Damascus Bāb al-Faradj

Fig. 8—Ṣaliḥīya

Fig. 9—Ḥimṣ, Darwishīya

Figs. 6–9—Fleur-de-Lis, Mameluke Coat-of-Arms

THE MUḲARNAS DOME

The third example of a muḳarnas dome at Damascus is the tomb chamber in the madrasa-turba of Nūr al-Dīn (*Figs. 10* and *60*), built in 567 H. (1172 A.D.). The three domes are not truly vaulted, but are corbeled. The oriental term for this method is muḳarnas, a loan-word from the same late Greek word from which cornice comes, and it is defined in the *Ḳāmūs* as a "scale-shaped (roof)." The mode has often been called stalactite, but wrongly, because suspended brackets do not appear before the definite decline of this earlier form in the Mameluke period. The back of the semidome of the māristān is, of course, invisible; the full dome appears from the outside as an ellipsoid; the dome of the madrasa, on the contrary, shows the back of its interior construction exposed: its elements are real vaults, whereas those of the mūristān are plaster casts only, fixed to a trestle of wood.

The three domes spring from a horizontal line along the upper edge of the supporting wall and they culminate in a conch. The semidome reaches this summit by means of a minute colonnade and nine intermediate zones of small cells or alveoli; the full domes have eleven almost homogeneous zones.

Greek κόγχη (Latin *concha*), Syriac qankhē, became a term for the apsis of a church; [25] it

published as a "Noradine mihrab" by G. Contenau, "L'Institut français d'archéologie et d'art musulmans de Damas," *Syria,* V (1924), Pl. L, 3, and p. 206.

[25] Cf. E. A. W. Budge, *Book of Governors* (London, 1893), I, liii; II, 431; *Arch. Reise,* II, 298 f.

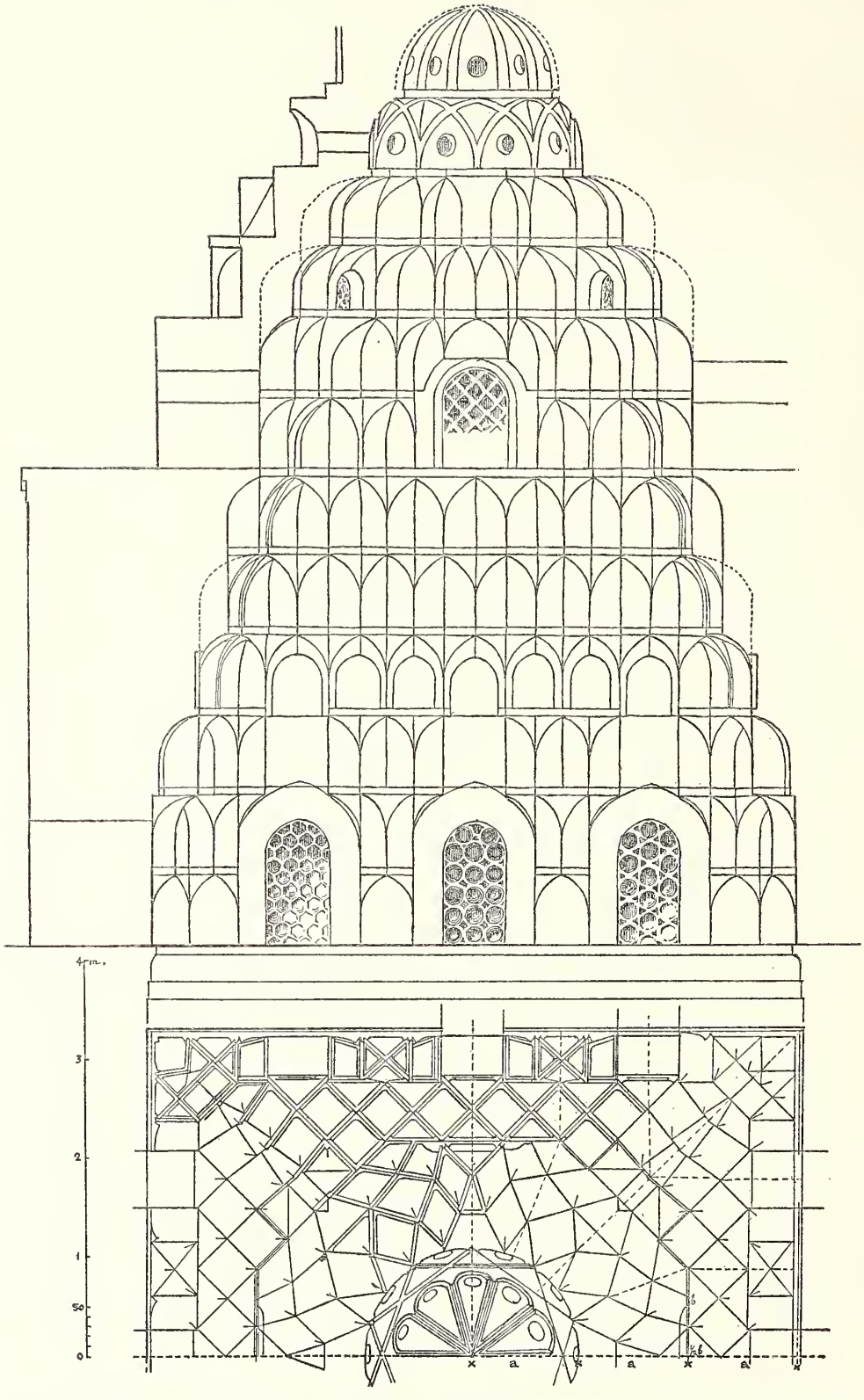


FIG. 10—DAMASCUS, MAUSOLEUM OF NŪR AL-DĪN, MUḲARNAS DOME IN TOMB CHAMBER

passed into Persian as kundj, a term for any open bay covered by a semidome or similar vault, such as the units—corresponding to an intercolumnation—that surround in long rows the courts of caravanserais, madrasas, and mosques. I assume that the Persians borrowed the word along with the device itself at an older period, without mediation of Syriac, for a Hellenistic architectural formula like the one shown in Figure 51 existed at Istakhr near Persepolis shortly after Alexander's time. Wherever the conches appear, they are atavisms, and of prime importance as sure indices of descent. Here the conch is evidence for Hellenistic descent, but the value of the index is neutralized by its early adoption in Iran.

The elements composing the zones, with the sole exception of two pairs of three-pointed brackets in the sixth zone and one pair of suspended cones under the conch of the semidome, are all concave cells, scales, and alveoli, making the whole elevation appear like a wasp's nest or a honeycomb. It would make no difference if full cubes, that is the shape enveloping the cells, replaced them, as they often do elsewhere. What matters is that the cells of two zones are always interlocked, those of the upper zone growing out between the lower ones. The vertical axes of the cells must alternate. The regular introduction of brackets between the concave cells changes this, for by lessening the depth of the upper cells they introduce a horizontal separation and, when brackets with extreme projection are used, the cells maintain the same vertical axes through successive zones, and the alternation is lost. These are later developments, foreign to the original type and introduced for the purpose of achieving a broader projection and thus covering the space with half the number of zones.

The main weight of the domes does not rest on the four corners. A study of the plans reveals that the corners do not carry weight, but are only covered by a clearly visible expansion of the concentrical zones over this area, and that the middle of the four sides, where a small window is always used, is similarly discharged. Thus, the static weight of the vaults rests on eight points, which correspond to the corners of an octagon determined by the circle inscribed in the square.

Comparing the domes of the mūristān and the madrasa, one can sense—but only when drawing the plan—that the first one, of 549 H., has no underlying geometrical framework. The conch has eight sectors over sixteen of the lower zones, but is turned 11° 15′ so that no axes coincide. This looks capricious, but examples will be encountered where it is a technical necessity: it is another atavism. There are no other dominating lines but the main axes of symmetry. The cells grow like a living organism, an art form of nature, that is to say, the dome is the result of empiricism, not of scientific study.

On the contrary, in the dome of the madrasa, of 567 H., the diameter is divided into six equal parts. Over the two middle ones stretch the conch and the zone below it and, strikingly enough, consisting of ten sectors against the sixteen of the lower zones (compare the twelve-pointed star over a vault of sixteen radii [*Fig 27*] from Natanz). The disharmony is caused by, and solves, the varying width of the sixteen, and this is the resonance, at the summit, of the disharmony necessary at the base for covering the corners. The zone under the conch is

produced by ten intersecting arches, a third atavism, which points to the origin of the alveoli, intersecting arches.

At two-thirds from the center, an octagon is arrived at, regular but for small appendages, expanding toward the corners, in the diagonals. At last, the full square is reached, partly through skillful use of cells grouped into brackets at both sides of the axial windows and over the corners. Almost every single point of the intricate design is determined by this underlying system, that is the way an architect schooled in geometrical design would work to re-

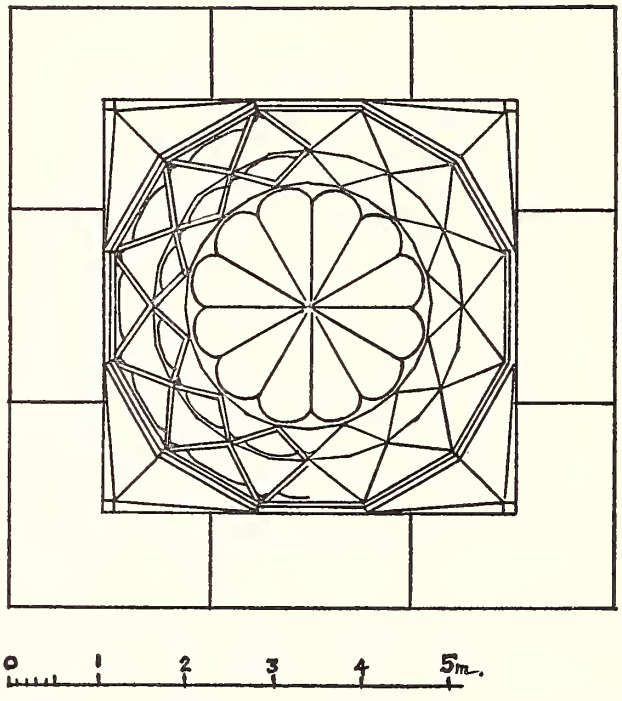


Fig. 11—Damascus, Turbat Ibn [or Banī?] al-Muḳaddam, Vault

shape an unsophisticated model. In spite of all their apparent similarity, the spirit of the second plan is totally different from that of the first. What happened is that an old, foreign pattern has first been directly imported and then eighteen years later has been reworked by a Syrian architect.

Turbat Banī 'l-Muḳaddam

One more example is known at Damascus of this type of vault, the dome of the Ḳabr Sayyidnā Ṭalḥa in the Daḥdāḥ Cemetery—part of the antique circus area—outside the Bāb al-Farādīs, rightly identified by Khaled Moaz [26] with the Turbat Ibn [or Banī?] al-Muḳaddam (*Fig. 11*).

[26] Khaled Moaz, "Le Mausolée d'ibn al-Muqaddam," *Mélanges de l'inst. franç. de Damas,* I (1929), 67–74, Pls. VII–XII.

The family of the Bani 'l-Muḳaddam is connected with a number of important buildings at Aleppo and at Damascus. But the tradition is not sufficiently precise to permit the attribution of the turba to any single member of the family. The building must obviously be dated as far back as the tradition permits. When studying the Madrasa al-Muḳaddamīya at Aleppo I gathered the following material.

Ibn al-Athīr [27] and Ibn al-'Adīm [28] state that Saif al-Dīn Ghāzī of Mosul died in 544; a group of emirs preferred the succession of Nūr al-Dīn to that of his younger brother Mawdūd, among them al-muḳaddam 'Abd al-Malik, mustaḥfiẓ, margrave, of Sindjār, whose son Shams al-Dīn Muhammad was commander of the citadel of Sindjār. The son is the author of the inscription on the Aleppo madrasa, dated 564, where he calls himself simply "Muhammad b. 'Abd al-Malik b. Muhammad." Nūr al-Dīn gave them the fief Ra'bān, between Aleppo and Sumaisāṭ, near the Euphrates. Muḳaddam is the title of the commanders of the Kurdish guard regiments under Nūr al-Dīn and Saladin.

In 518, during the siege of Aleppo by Dubais, Joselin, and Baldwin, the cadi Abu 'l-Ḥasan Muhammad b. Yaḥyā ibn al-Khashshāb, founder of the Great Minaret of Aleppo, seized four churches in town in reprisal for atrocities committed by the crusaders and converted them into masdjids: the (later) Ḥalāwīya (cathedral), the Masdjid al-Ḥaddādīn (of the smiths), Masdjid al-Ḥaṭṭābīn (of the wood dealers), and a fourth one:

> The masdjid in the Ḥaṭṭābīn street was converted into a ḥanafite madrasa by 'Abd al-Malik ibn (!) al-Muḳaddam . . . . The Madrasa al-Muḳaddamīya, founded by 'Izz al-Dīn 'Abd al-Malik al-Muḳaddam, one of the churches converted into a masdjid by the cadi Ibn al-Khashshāb, ... he began building in 545.[29]

Evidently, "Ibn" al-Muḳaddam (in the first reference of Ibn Shaddād) is a mistake; it is equally wrong in Nu'aimī.[30] 'Abd al-Malik was the muḳaddam himself; his title 'Izz al-Dīn is unconfirmed; he must have died before 564, the date of the Aleppo inscription.

In 569, Nūr al-Dīn, when dying, appointed Shams al-Dīn Muhammad ibn al-Muḳaddam a member of the council of regency which acted for his son Ṣāliḥ Isma'īl, a minor.

In 570–74—according to Maḳrīzī, Ibn al-'Adīm, and others—Shams al-Dīn held Baalbek as a fief from Saladin, but was forced to hand it over to Tūrānshāh b. Ayyūb. After the death of Farrukhshāh in 578, Saladin appointed Shams al-Dīn governor of Damascus. At that time, the family acquired a great dār, "palace," near the Bāb al-Farādīs.[31] In 583, he led the Syrian caravan on the pilgrimage to Mecca and was killed at 'Arafāt.[32] Ibn al-Athīr wrote his epitaph: "Thus was accorded to him martyrdom (shahāda), after his fight in the Holy War (djahāda), and after having been witness (shāhid) of the liberation of Jerusalem."

[27] Ibn al-Athīr, *op. cit.*, XI, 92.

[28] E. Blochet, *L'Histoire d'Alep de Kamâladdin* (Paris, 1900), p. 11.

[29] Ibn Shaddād, *Durr*, pp. 83 and 118.

[30] MS Schefer, quoted by Sauvaire, *JA.*, 1894, p. 323: Ibn al-Muḳaddam, Shams al-Dīn Muhammad b. 'Abd al-Malik 'ibn' al-Muḳaddam.

[31] Ibn Shaddād, *JA.*, 1894, p. 284.

[32] According to Ibn Shaddād and Ibn al-Athīr; al-Ṣafadī, *Tuḥfa*, quoted by Nu'aimī, gives 584 H.

In 591, 'Izz al-Dīn ibn al-Muḳaddam, lord of Bārīn, which had been a fief of Damascus, recognized the suzerainty of Ẓāhir Ghāzī of Aleppo. . . .
In 596, Bārīn became a fief of Hama; 'Izz al-Dīn got Manbidj in exchange, but died; a younger brother went to Manbidj.[33]

Madrasa al-Muḳaddamīya intra muros built under Saladin by Shams al-Dīn Muhammad ibn al-Muḳaddam at the side of his large house. He built also a turba, a masdjid, and a khān, all existing, inside the Bāb al-Farādīs.[34]

Madrasa al-Muḳaddamīya extra muros, opposite the Ruknīya, on the slope of the Ḳāsiyūn . . . . this is not the Turbat al-Muḳaddam—was built by Fakhr al-Dīn b. Shams al-Dīn ibn al-Muḳaddam.

Sauvaire had the copy of an inscription (No. 250, dated 990 H.) coming from this madrasa inside the city gate:

The (Madrasa al)-Muḳaddamīya extra muros at Mardja Daḥdāḥ, known as the Turbat al-Muḳaddam, was built by the emir Fakhr al-Dīn Ibrāhīm who died in 587 and was buried there . . . . Fakhr al-Dīn ibn al-Muḳaddam, Ibrāhīm b. Muhammad b. 'Abd al-Malik, owned Bārīn and other castles; Ẓāhir Ghāzī took everything except Bārīn from him; he died at Damascus and was buried in the madrasa of his family outside the Bāb al-Farādīs.[35]

This tradition permits one either to accept, as Khaled Moaz does, Ibrāhīm as founder of the turba in the Daḥdāḥ Cemetery, in which he was buried in 597, or, as the building looks older, to consider the turba as that of his father Muhammad, who died and was buried in 'Arafāt, but had built it before 583.

The building does not belong to the usual type of Damascus turbas. The lower part, a tetrapylon, displays excellent masonry. The blocks have the same fine beveling as the Muḳaddamīya and other buildings of the Nūr al-Dīn period at Aleppo. Within, a dodecagon is produced by pendentives that are a cross between the spherical and the pyramidal. From it springs a muḳarnas vault in large masonry blocks, that are plaster coated. It has two zones of very large alveoli and brackets which appear very archaic even if compared with the oldest specimens at Aleppo, and a large conch, the section of which is more than a half circle. All the units of this vault are richly decorated, just as in Baghdad, but in stucco; the decoration, archaic in comparison with other Damascan specimens, shows close affinities to Iraqian brickwork. The technique, called "en découpage" by Moaz, is that used in Iraq and is inherent to brick, whereas stucco can imitate any kind of form and does not require any special style.

The genus to which this species of vault belongs is purely Iranian. Much has been written about Sasanian vaults, especially in regard to their form and technique. But the term Sasanian is wrong; there was not a single technical advance in the Sasanian period beyond

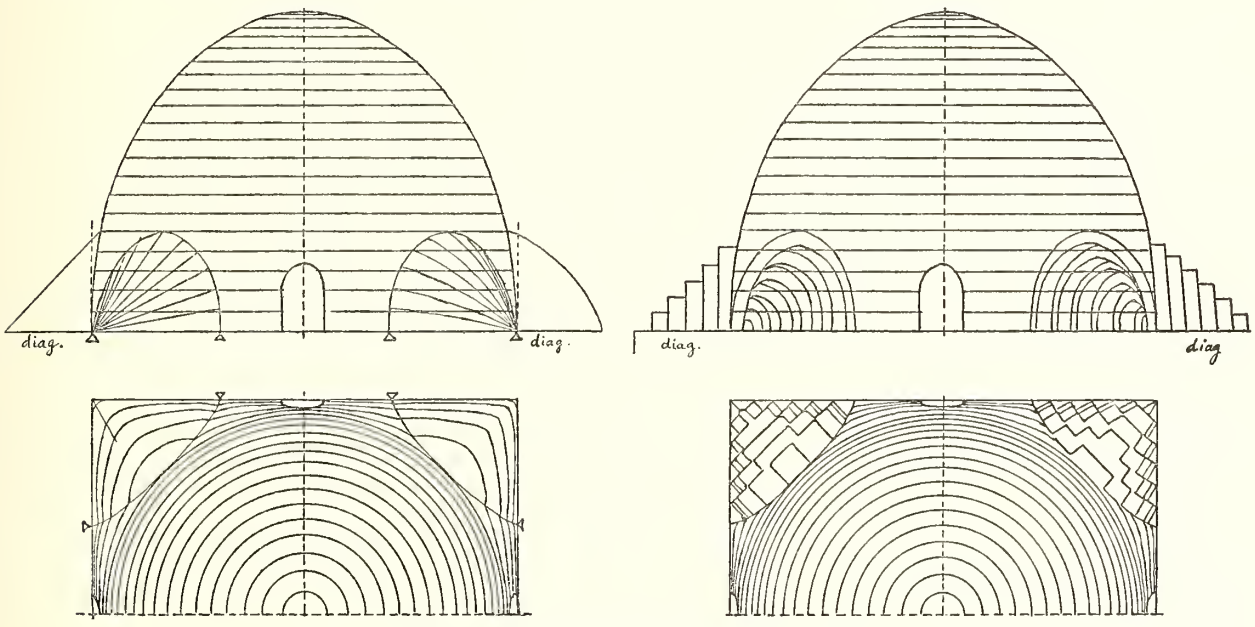
[33] Ibn al-'Adīm, quoted in Blochet, *op. cit.*, pp. 120 and 133.

[34] Nu'aimī, *JA.*, 1894, pp. 284 ff. (source Ibn Shaddād?).

[35] Taḳī al-Dīn al-Asadī, quoted by Sauvaire, *JA.*, 1894, pp. 325, n. 205.

the achievements of the preceding Arsacid period. Proof of this fact will be presented later in this study.

The Iranian dome (*Figs. 12* and *13*) is produced by corbeling, only its summit is really vaulted. Without exception it is constructed over a square room, without exception an elliptical, high-crowned [36] curve is used. It always springs from a horizontal line corresponding to the top of the walls of the chamber. I do not know of any exception, even in much later



FIGS. 12–13—SCHEME OF THE IRANIAN DOME

structures. Each of the four corners is covered by an irregular squinch, an expansion of the dome which may take the shape of a half cone with horizontal axis and straight or slightly curved sides, or of a row of arches, vertical or slightly inclined, increasing in size, inscribed into the enveloping cone. Four little windows over the middle of the sides are essential. Thus the weight of the dome is never transmitted to the four corners, but to eight points of the inscribed regular octagon. Even most of the low-crowned, star-shaped vaults of the Seljuk period avoid springing from the four corners.

The intersection of the four squinches with the cupola itself would, in theory, be a three-dimensional, warped curve, but its shape is never geometrically exact; nor is, in general, a well-defined geometrical form ever reached; all lines are approximations. The entire vault is the result of empirical knowledge, ages old, but not of methodical study. The Iranian dome is the product of natural growth.

[36] This word means "surhaussé, überhöht," i.e., the height greater than the radius at the base; correspondingly "low-crowned" for the opposite term, surbaissé. Like others, I have often used the expression "parabolic arch," which is wrong: the vertical wall is the tangent, not an asymptote of the arch.

The designs in Figures 12 and 13 show the gradual advance of the corbeling, under the assumed relation: 40 cm. height of strata to 10 m. span. It grows like the annual rings of a tree, or the lines of a skin. The way these lines extend to cover the corners is unmistakable: wherever one finds that fingerprint again, one has a vault of Iranian origin.

This is not the place to trace back to the bronze age the prehistoric beginnings of the Iranian dome, built in mud or sun-dried bricks. It is unrelated to and diametrically opposed to the western dome. In the Mediterranean world, in the Mycenaean, Etruscan, and Sardinian sphere, the cupola appears over a cylindrical room, first corbeled, then truly vaulted, and always executed in large stone masonry. With the transition from corbeling to vaulting comes the circular arch. The Greek period interrupts this development, and the Roman and Hellenistic architects are confronted with the task of reconciling vaults and colonnades. They first used the cross vault on four corner columns, later the round dome, setting it firmly on pendentives, that is to say, on four spherical triangles produced by the intersection of the four walls of a square room with the half sphere constructed over the circumscribed circle. Their upper rim, the inscribed circle, is the perfect support of a cupola of equal radius. That is a scholarly solution of a stereometric and static problem, unimaginable without Euclid and his school. The cupola rises out of the four corners far below the upper point of the middle of the walls, the walls are without any burden, for the four corners carry the whole weight. Whatever shape the pendentive may assume, it is as patent an index of western origin as the Iranian squinch is of eastern. There is no point in discussing the western or eastern origin of the domes of Constantinople: without Euclid there would be no Hagia Sophia.

The domes under discussion belong to the Iranian genus, but did not originate in Iran. The oldest preserved specimen is Imām Dūr, on the Tigris, the north point of Samarra (*Fig. 62*).

Imām Dūr, on the Tigris

(*Figs. 14–15, 57, 62*)

Mashhad, according to Arabic etymology means "place of a shāhīd," of one who "witnessed" the shahāda, "confession of unity of Allah," not necessarily by dying for it as shahīd, "martyr." This meaning comes close to that of Greek martyrion; the word is, however, not purely Arabic; it replaces as an architectural term, Syriac shahdē, martyrium, and its more general meaning is "tomb of a saint." [37]

Publications on Imām Dūr have been made by M. van Berchem,[38] and Herzfeld.[39] Imām Dūr is the mashhad of a son of the fifth imām (direct descendant of Muhammad) Abu 'Abd Allāh b. Mūsā al-Kāẓim.

[37] Compare the remarks on maḳām in a later part of this study.

[38] In Sarre and Herzfeld, *Arch. Reise,* I, 30–34.

[39] *Ibid.,* I, 231–34; *Erster vorläufiger Bericht über Samarra* (Berlin, 1912), Chap. VI; details and corrections in *Ausgrabungen von Samarra,* Vol. VI (in press).

Inscription 2

I بسمله ... 2. هذا ما أمر بعمل القبّة الأمير 3. شرف الدولة مسلم بن قريش رحمه الله

V هذه صعه (!) يدى 2. أبى شاكر ابن [أبى] الفرج 3. ابن ناسوه البنّاء أجره الله

VI كان المتولى المغتضى مؤنس 2. ابن حمدان رحمه الله 3. وتولّا بعده الحسن ابن 4. رافع أجره الله

VII هذا ما أمر بتمامه الحاجب 2. ابن [ابو read] جعفر محمّد بن 3. الا صفهسلار الخطير 4. ابن [أبى read] منصور أجره الله

VIII وبعده عميدى العزاز أبو الفتح 2. طاهر وابو المحاسن عبد الجليل ولدى علىّ بن محمّد 4. الدهستانى اجرهما الله

[I.] In the name of Allah! .... The emir Sharaf al-dawla Muslim b. Ḳuraish, Allah be merciful to him, has ordered the building of this cupola. [V.] This is the work of the hands of Abū Shākir [b.] Abi 'l-Faradj b. B'SVH, the architect, Allah reward him! [VI.] The trustee was the prematurely deceased Mu'nis b. Ḥamdān, Allah be merciful to him, and after him al-Ḥasan b. Rāfi' was trustee, Allah reward him! [VII.] This is what the chamberlain Abū Dja'far Muhammad, son of the high general, isfahsalār al-khaṭīr, Abū Manṣūr, Allah reward him! has ordered to be finished. [VIII.] and after him the two mighty 'Amīd Abu 'l-Fatḥ Ṭāhir and Abu 'l-Maḥāsin 'Abd al-Djalīl, sons of Ali b. Muhammad al-Dahistānī, Allah reward them both!

Sharaf al-Dawla Abu 'l-Makārim Muslim b. Ḳuraish, an 'Uḳailī Arab, 453–78, at the height of his power ruled over the lands from Aleppo to Mosul and Baghdad.[40] He was killed in battle against Sulaimān b. Ḳutulmish on 24, Ṣafar 478 (June 21, 1085), at Tall 'Afrīn. On the urgent demand of the people of Aleppo, the great Seljuk Malikshāh interfered, sending his brother Tutush, since 471 at Damascus, against Sulaimān, who was defeated and killed. Ibn al-'Adīm relates: "He was buried at the side of Muslim b. Ḳuraish; another: Muslim b. Ḳuraish was transported to Samarra; another: he was buried with Muslim in one and the same tomb."[41] Only Ibn al-'Adīm mentions the removal of the remains of Muslim to Samarra, which means Imām Dūr.

The 'Uḳailids were Shiites, like their modern descendants, the Muntafiḳ, and Muslim seems to have willed to be buried in the mashhad that he had founded for Muhammad b. Mūsā. As soon as peace came, his will was executed.

[40] Ibn al-Athīr, *op. cit.*, X, 10–91. Al-Bundārī calls him once, inaccurately but expressively, "sultan of the Arabs." al-Bundārī, *Histoire des Seldjoucides de l'Irāq*, ed. M. T. Houtsma (Leyden, 1889), p. 89.

[41] MS ar. 522, Mus. Asiat. Pétersb. fol. 68 ff.: فدفنت الى جانب مسلم بن قريش وقيل ينقل مسلم بن قريش الى سرّ من راى وقيل دفن معه فى قبر واحد

The text of V repeats the signature of the architect, which appears in brickwork high on the exterior of the tower. All of the other inscriptions were executed after the death of Muslim. The first two trustees, according to their names Ḥamdanid Arabs, are unknown; apparently the first died before Muslim. The unexpected death of Muslim caused an interruption in the work. It was resumed first by the chamberlain Abū Dja'far Muhammad, son of the general Abū Manṣūr, after him by two brothers, both 'amīd al-a'azz, i.e., "chief of police," Abu 'l-Fatḥ Ṭāhir and Abu 'l-Maḥāsin 'Abd al-Djalīl, sons of Ali al-Dahistānī. These titles alone clearly indicate personages of the Seljuk court.

Ibn al-Athīr states: "The 'amīd al-a'azz Abu 'l-Maḥāsin received the charge of police of Baghdad after his brother was dismissed."[42] He distinguished himself there, and after many vicissitudes in the contest over the succession of Malikshāh, who was assassinated in 485, he became vizier of Barkiyārūḳ in Isfahan. Al-Bundārī calls him "al-ustādh 'Abd al-Djalīl al-Dahistānī." On 18, Ṣafar 495 (Dec. 12, 1101) he, too, was murdered by an assassin. The brother Kamāl al-Mulk Abu'l-Fatḥ died in 487; he had been secretary of the chancellery to Malikshāh, and his downfall was caused by an ill-advised attack of his son, an intimate of the young sultan, on the grand vizier Niẓām al-Mulk.

In 495[43] Abū Manṣūr Muhammad b. al-Ḥusain al-Maibudhī succeeded the murdered 'Abd al-Djalīl with the title vizier (instead of isfahsalār) al-khaṭīr. As trustee of Imām Dūr, his son Abū Dja'far Muhammad, with the rank of a chamberlain, preceded the two brothers, and the father succeeded the second one in the vizierate. This is quite possible.

Apparently, all the events took place in a few years. After the death of Muslim, whose relations to his suzerain were always good, the high Seljuk officers of Baghdad took up his opus interruptum, without long delay. But, since Abu 'l-Fatḥ was dismissed in 482 and died in 487, and since Abu 'l-Maḥāsin left Baghdad in 493, the work was certainly completed before 487, probably before 482–83. The same architect signed the exterior and the interior, and his signature on the north front proves that the rough brickwork was finished when Muslim died. His burial did not take place before 479. The three missing panels probably mentioned the dedication of the building to the son of the imām, Muslim's provision to be buried there, and the date.

Figures 14 and 15 show plans and section of the tower. The decoration is in stucco, usual in that region; one sees what has become of the art of Samarra in two hundred years. Plaster is a nonresisting material, and the architect indulged in an orgy of intemperance. The details are hideous, and yet, when surrounded by the chiaroscuro of the room, one cannot but feel impressed, and the reason is certainly the extraordinary crescendo of decoration toward the summit. The illustrations make a description unnecessary.

To follow the outline of any figure by a framing curve is an aesthetic principle that can be traced back, in the ancient East, to the Stone Age, and there are striking analogies between Stone Age and medieval pottery designs in that respect. The regular frame, with its decorative

[42] Ibn al-Athīr, *op. cit.*, X, 120.

[43] According to Ibn al-Athīr, *ibid.*, p. 231.

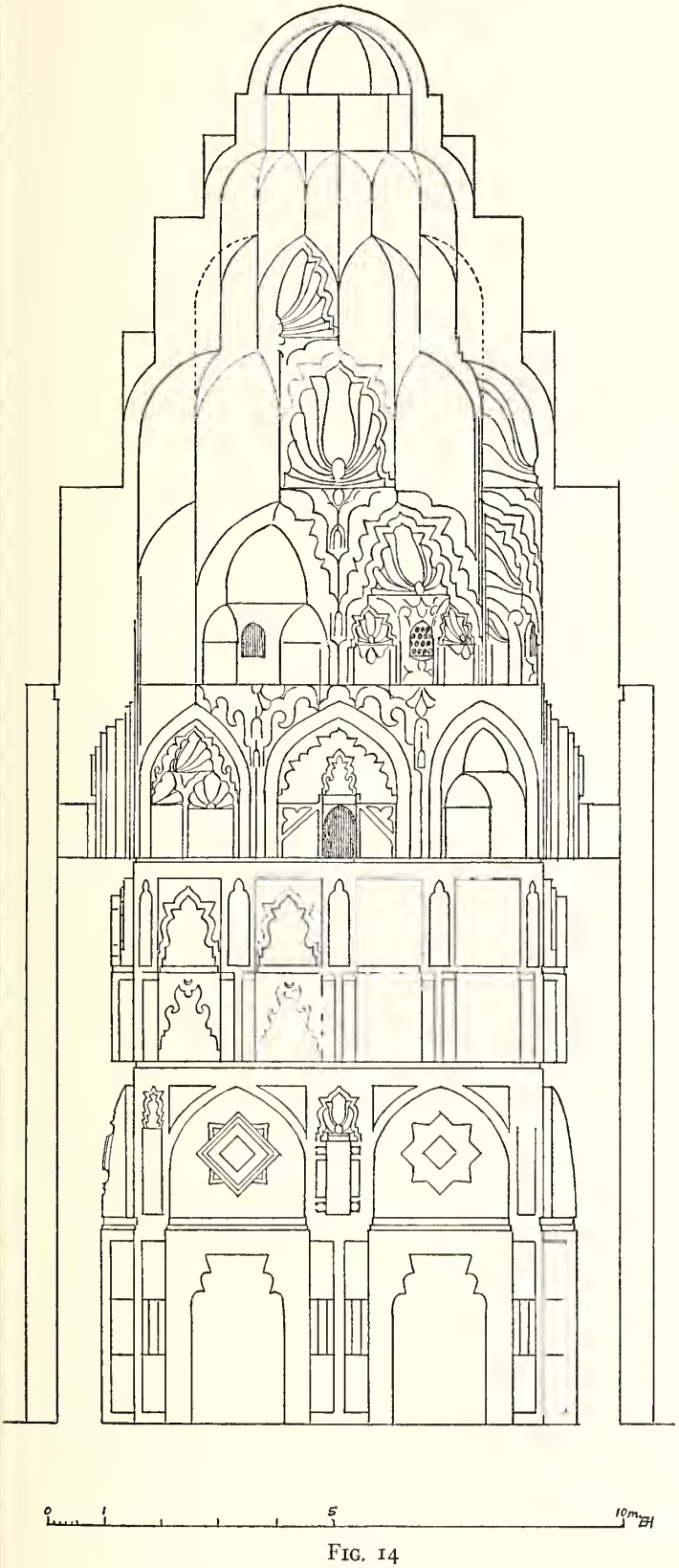
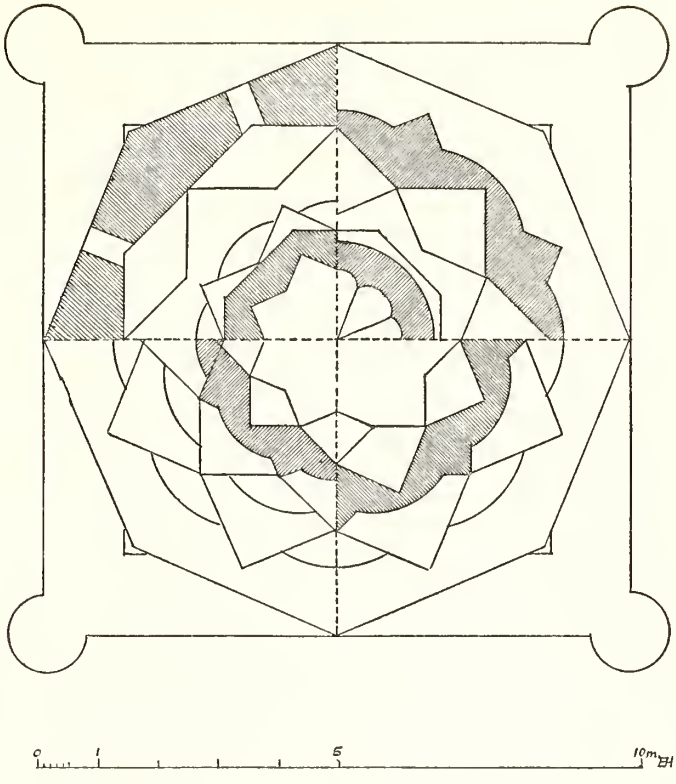


Fig. 14



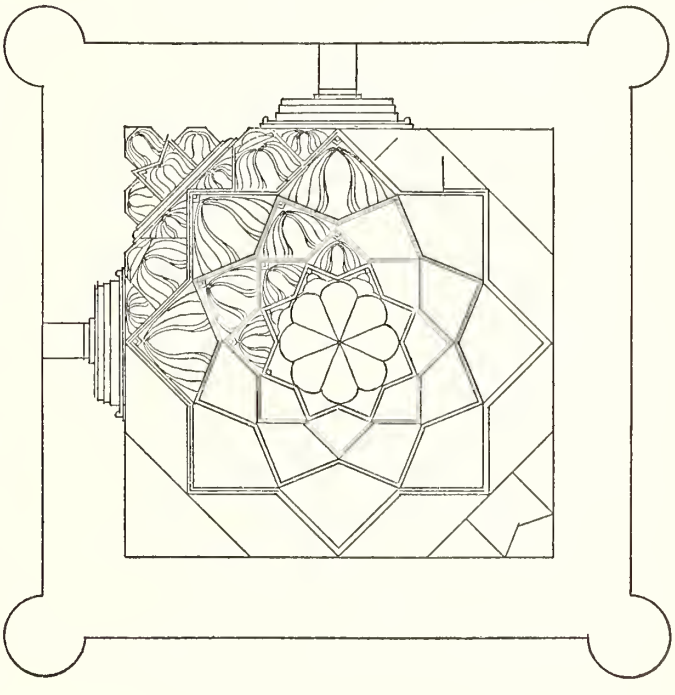


Fig. 15

Figs. 14–15—Imām Dūr, Tomb of Muslim ibn Ḳuraish

motif broken across the diagonal, was not known to Egypt and Babylon, but was achieved only in Assyrian art. To multiply framing lines, as scribbling children do, is rather a decadent fashion. Here, the baroque curves of the multiplied frames are derivatives of forms appearing as early as the third century, on the crenelations on the walls which surround, for a total length of one mile, the interior court of the Djawsaḳ al-Khāḳānī in Samarra (*Fig. 16*), and around

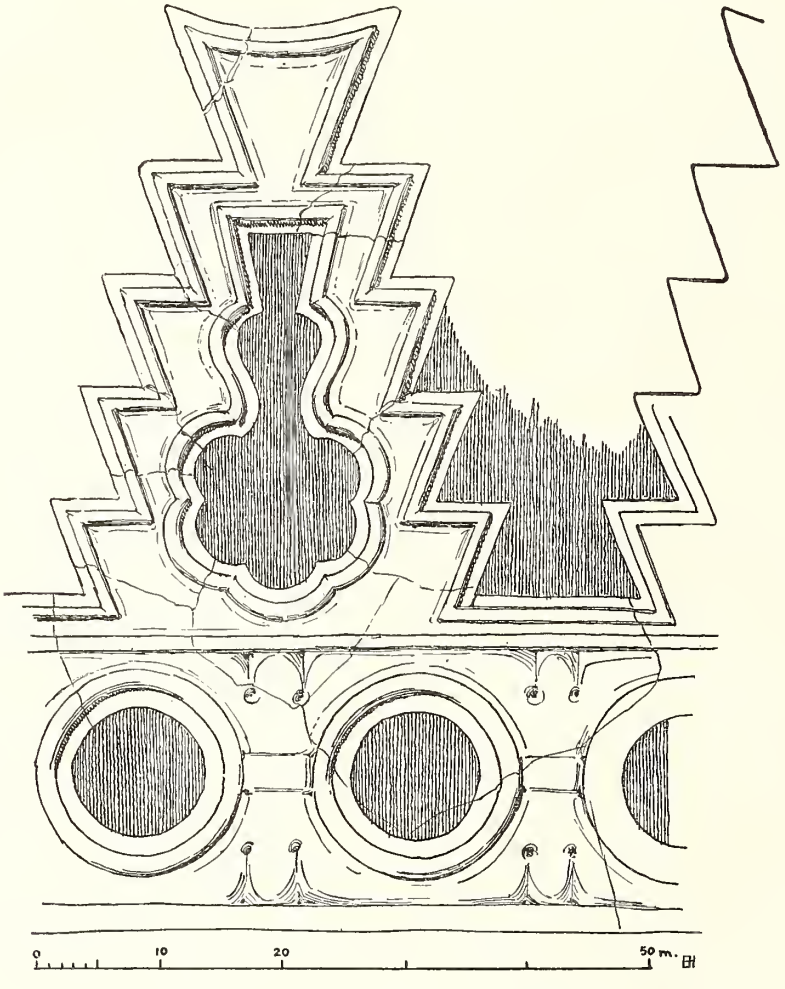


Fig. 16—Samarra, Djawsaḳ al-Khāḳānī, Crenelations from the Interior Court

the niches in a private house there (*Fig. 17*). The curves look meaningless and capricious, but most of them represent a broken arch springing from a pair of brackets—this being a Hellenistic motif. Such an arch is called in Baghdad kufulī (vowels uncertain), a name probably to be connected with kifl, kafal, plural akfāl or kufūl, words for that part of a camel's or horse's back on which the second rider, radīf, sits, hence equivalent to "withers" or "dos

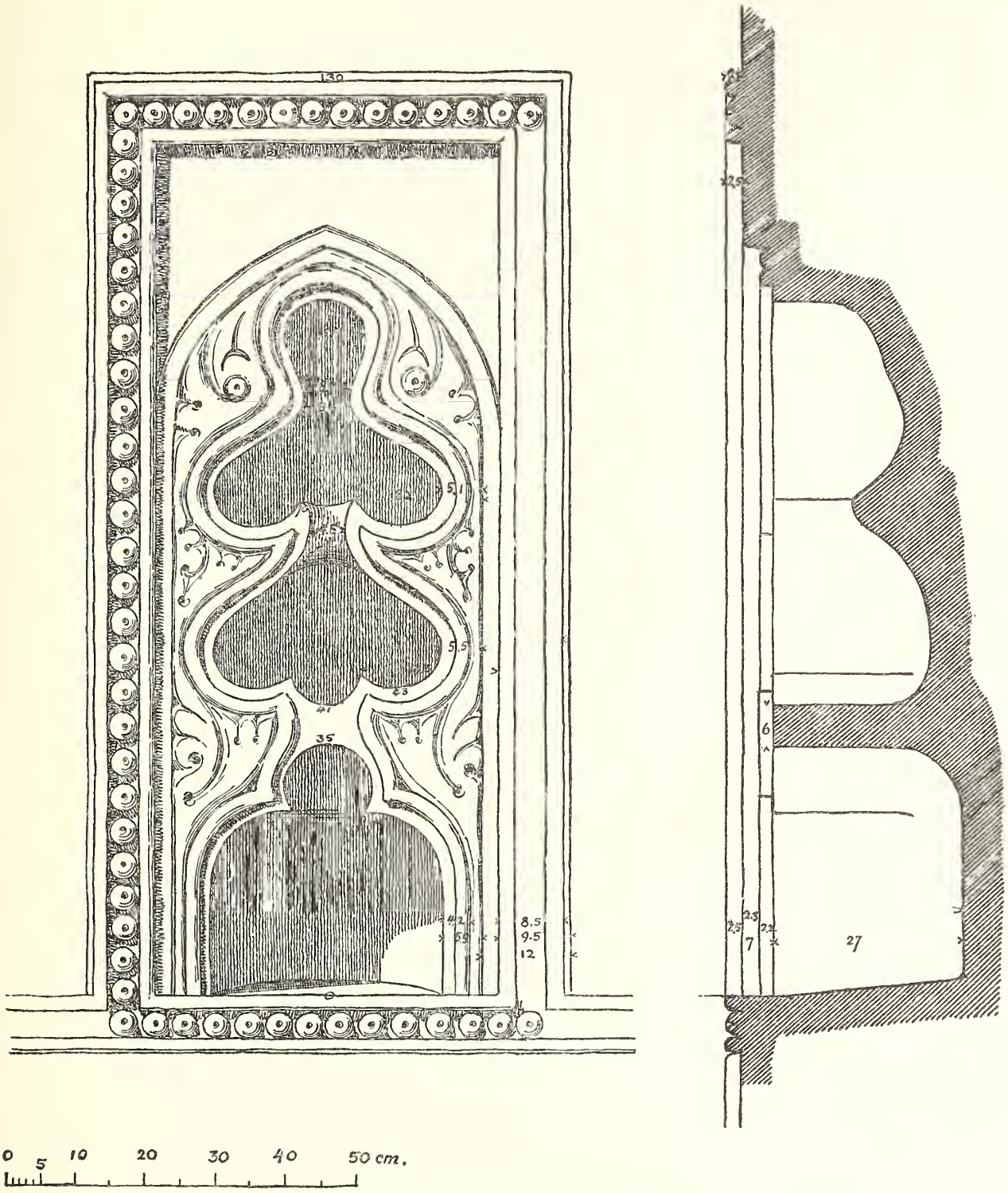


FIG. 17—SAMARRA, NICHE FROM A PRIVATE HOUSE D-1099

d'âne." To this style belongs the dwarfed gallery under the semidome of the māristān of Damascus, which alone proves the vault to be part of the first building. And one may say, to anticipate, that every detail of stucco molding in the many Ayyubid turbas of Damascus is already in use here.

Sufi Sanctuary Above the Allahu Akbar Pass

From Persia I can only cite one example of such curves, a mihrab hewn out of the rock in the Sufi sanctuary above the Allahu akbar Pass which opens on the glorious plain of Shiraz (*Fig. 52*). The mihrab, certainly not later than the Seljuk period, has an inscription in simple, almost awkward Kufic, in five lines:

Inscription 3

١. بسمله . . . ٢. لا اله الاّ الله محـ (corner) لصاحبه ؟٣. رحم الله من ٤. مرسا ؟ هذ ٥. ا المحراب

Bismillah and symbolum, Allah be merciful to him who ordered [or: who decorated?] this mihrab made.

This inscription is intentionally anonymous and shows no date.

The same style dominates the sanctuary of al-Arba'īn at Takrīt, opposite Imām Dūr; [44] the octagonal minaret of 'Ānah in the Euphrates; [45] the so-called palace at Rakka.[46] The tombs of awlād sayyid Ahmed and of Nadjm al-Dīn at Ḥadītha, on the Euphrates,[47] and of sheikh Shiblī near Mayādīn, combine a sober variety of this style with the same type of cupola. It is the style of the southern Djazīra when that region belonged to the Ḥamdanids and 'Uḳailids.

The dome of Imām Dūr covers the regular octagon produced by four corner niches in the third story (*Figs. 15* and *57*). To build a cupola over an octagon offers no difficulties, and the plan is entirely regular. The covering is accomplished in five corbeled zones, crowned by a conch. The conch has eight sectors, and every zone eight alveoli. The salient angles of these eight-pointed stars are all right angles. As the cells decrease in area toward the summit, so the height of the zones decreases in a comparable ratio.

As a structure it is the simplest of all examples of this type; from it descend in straight line domes like that over the tomb of Sitt Zubaida in Baghdad (*Fig. 63*). But as decoration, Imām Dūr is the most exuberant of all. Eight arcades with little windows and many conchs constitute the transition zone. One might call the pattern after which the corner niches are constructed the "Seljuk squinch"; they are to be compared with those under the large dome of the Great Mosque of Isfahan. The first zone of the dome continues this motif. In the higher ones every unit is filled by one large conch, and it is always the broken arch on brackets that is taken as the outline of these conchs.

This dome establishes beyond doubt the intimate connection of the conch, a form of Hellenistic origin, with the genesis of the muḳarnas, but the conch is not necessarily the only

[44] *Arch. Reise,* I, 221, Figs. 109–12.
[45] *Ibid.,* II, 319, Pl. CXXXVII.
[46] *Ibid.,* p. 363, Pl. LXX.
[47] *Ibid.,* Fig. 304.

factor. That is why, again and again, one finds little conchs on accentuated points of vaults that are derived from this prototype, and why, in the late and senile examples, a degenerated conch—almost an acanthus leaf—adorns every single unit, in the same manner as lines of bad character become more prominent on an aging face.

The Tomb of Sitt Zubaida

The best known example of the type, the tomb of Sitt Zubaida, wife and cousin of Harun al-Rashid, in Baghdad, was already mentioned (*Figs. 18* and *63*). It is not the original

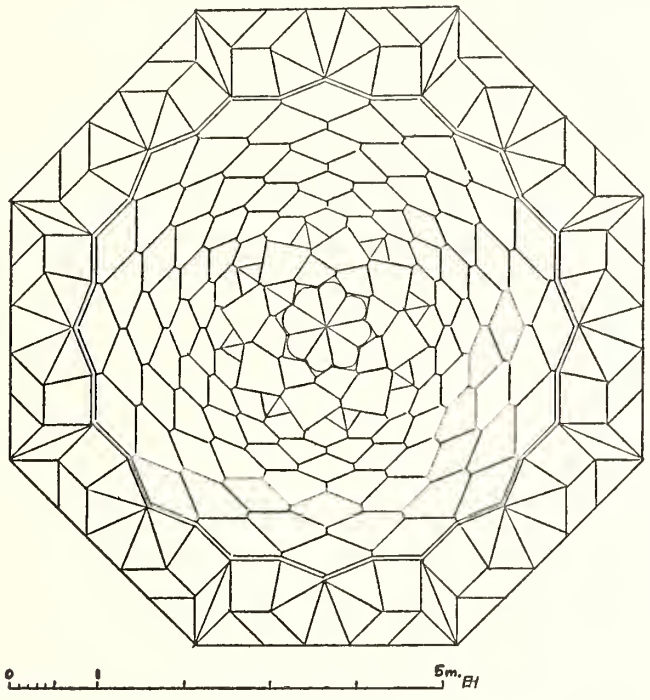


Fig. 18—Baghdad, Sitt Zubaida, Vault

tomb, but the one which replaced the original at the time of the Caliph Nāṣir li-Dīn Allāh.[48] In an epitaph preserved in literature [49] the mother of one Malik al-muntakhab 'Alam, who died in 546 and was buried in Mecca, is called kāmilat al-'arab wa 'l-'adjam, "ideal (woman) among the Arabs and non-Arabs," i.e., among all mankind. That is what Zubaida was considered to be, and her cupola takes this same rank among the domed structures of the Arabs and Persians, the perfect specimen of the species.

Above a zone of transition, consisting of eight compound brackets, rise ten zones of muḳarnas, like a rich lotus design. Above the seventh course, the units would have become too diminutive had their number remained at sixteen. Therefore, the seventh course changes

[48] Cf. *Arch. Reise,* II, 173–79, Figs. 204, 209; Pls. L and CXXXIII.

[49] MS ar. Berlin 6124, fol. 13a. *Répertoire,* No. 3156 translates "femme parfaite des Arabes et des Persans."

over to eight units. Below, at the springing line, the salient angles of the sixteen must lie in the normal and diagonal axes of the octagon. And the reduction in number, necessary above, has the inevitable effect to turn courses eight to ten, including the conch, about 11° 15′. The same deviation, for no reason, of the conchs at Damascus is thus explained as a rudiment of this previous phase.

The Tomb of Hasan al-Baṣrī at Zubair

To the same period, about 600 H. (1200 A.D.) belong Nadjm al-Dīn near Ḥadītha, al-Nadjmī and al-'Āziba on the Shaṭṭ al-Nīl.[50] Probably somewhat older is the tomb of Hasan al-Baṣrī at Zubair, Old Basra (*Fig. 68*), an excellent example, but certainly not a building of the time of its occupant, 110 H. From the outside the pointed cupola looks as if it had grown, like one of the palm trees that stand around it. K. W. Loftus, one of the first to observe and describe these vaults, used the picturesque term "fir-cone vaults" for them.

The Mausoleum of Sheikh Shihāb al-Dīn 'Umar al-Suhrāwardī

Baghdad has a second example of this type of monument in the Mausoleum of Sheikh Shihāb al-Dīn 'Umar al-Suhrāwardī (*Fig. 65*), in the Wardīya Cemetery.[51]

Suhraward, Pahlavi Suhrābgird, is a town near Zandjān in Azerbaijan. Yāḳūt [52] mentions Sheikh Abu 'l-Nadjīb 'Abd al-Ḳādir al-Bakrī, a descendant of the Caliph Abū Bakr, who was born in 490 in Suhraward, settled in Baghdad, taught at the Madrasa al-Niẓāmīya (founded by Niẓām al-Mulk), and lived for some time, after 558, at Damascus, much honored by Nūr al-Dīn. His nephew and pupil, Shihāb al-Dīn 'Umar, whom Yāḳūt called "the imām of his time as regards his speech and character," was born in 539; he became the confidant of caliph Nāṣir li-Dīn Allāh and died 1 Muḥarram 632 H.[53] He was buried in Wardīya Cemetery.

Inscription 4

The inscription is in one line, 60 cm. high, of square tiles with little brick rosettes as the ground material; as in madrasa al-Mustanṣirīya, Baghdad (630 H.);[54] and Yaḥyā Abu 'l-Ḳāsim, Mosul (637 H.).[55] The inscription begins with the bismillah and Koran, LVII, 16: "Behold the traces of Allah's mercy, how He makes the earth live after its death. . . .," the verse normally quoted in epigraphy for restorations,[56] then:

امر بتحديد بعد دثورها فى ا . . .

". . . . has been ordered to rebuild after its decay at the. . . ."

The formula is official, if not royal, and it is regrettable that names and date are missing. This inscription must be attributed to the exact period of the death of Shihāb al-Dīn, 632, and

[50] Nadjm al-Dīn: *Arch. Reise,* II, Fig. 304; al-Nadjmī and al-'Āziba: *ibid.,* I, Fig. 123, Pls. 35 and 36.

[51] *Ibid.,* II, 179, Pl. IL.

[52] Yāḳūt, *op. cit.,* III, 203, s.v.

[53] E. G. Browne, *Literary History of Persia* (Cambridge, 1929), I, 423; Ibn Khallikān, *Biographies,* ed. F. Wüstenfeld (Göttingen, 1835), p. 507.

[54] *Arch. Reise,* Pl. CXXX.

[55] *Ibid.,* I, 23.

[56] E.g. Aleppo, Bāb Ḳinnasrīn, Bāb Anṭākiya, Citadel, etc.

it is strange to read the word tadjdīd, which means the replacing of an old building by a new one.

Inscription 5

A glazed tile, 38 by 55 cm.; five lines. The factual contents start in line three:

3. ... عمر هذا المكان المبارك من خالص ماله الفقير الى رحمة الله 4. والمحتاج اليه خواجه نور الله بن خواجه حسن [two illegible words] الله وتوفيقه ووقّفه مسجدًا 5. لله تعالى وقفًا شريعًا صحيحًا فمن بدله Koran, II, 117 وذلك بسنة ٩١٧

According to this text, the place, makān, was repaired in 917 H. (1511 A.D.) and a mosque was founded by an unknown person. Later repairs were made in 1856, 1870, and more recently.

None of these repairs has altered the mausoleum itself and its vault, which is mentioned already in the seventh century H., under the name al-mīl "the tower," [57] on account of the high pointed shape of its vault. It may be assumed that it was built during the lifetime of the sheikh and was finished by the time he died in 632 H.

The Palace Inside the Ḳal'a of Baghdad

The same method of vaulting, though not in the form of a free standing dome, prevails in the palace inside the Ḳal'a of Baghdad [58] (*Figs. 19, 58,* and *59*), built with the finest brick technique. Its time is that of Nāṣir li-Dīn Allāh, 575–622, an old attribution of mine confirmed by the new material.

Enough of the plan is preserved to establish its symmetry, therefore, the missing parts can be supplied. It is the plan of the palaces of Ardashīr I at Firūzābād and Kaleh-i Dukhtar (218–28 A.D.). The main īwān on the east side of the court had a counterpart on the west or riverside, and the row of deep kundjs ran all around the court in contrast to the palaces of Ardashīr, in which the niches are flat. As in the ribāṭ Anōshirwān,[59] a continuous corridor connected the kundjs. Apparently, this plan represents the Seljuk phase of the Iranian palace court. The īwāns occupy the full height of the building, the smaller rooms around the corners have half their height and are repeated, as in a madrasa, in a second story. In the southwest corner is the river gate, constructed after a plan called mābain, "which is between," in Baghdad. These gates have a deep but blind īwān; it is passed by on the right and left, an arrangement which prevents one from looking directly into the building from the exterior. Here, the mābain is shifted into the corner in such a way that only one of its passages leads

[57] L. Massignon, *Mission en Mesopotamie, Mém. inst. franç. d'arch. or.,* vol. XXXI (Cairo, 1912), II, 82. from Ibn al-Kutubī, *Tārīkh al-'Uyūn,* quoted by Maḥmūd Shukrī al-Alūsī. Mīl is Latin mille, "mile stone," also used for minarets.

[58] First published in *Arch. Reise,* II, 107–77, Pl. LII, CXI–CXII. In 1907–8 only the main īwān and parts of the court were visible. In 1923 I saw and measured much more. Since that date the Directorate of Antiquities has demolished the later buildings that covered the old ones, strengthened the foot of the walls, and published a booklet containing forty-seven photographs: *Remains of the Abbasid Palace in the Baghdad Citadel* (Baghdad, 1935).

[59] The plan of this building will be found in the next installment of this study.

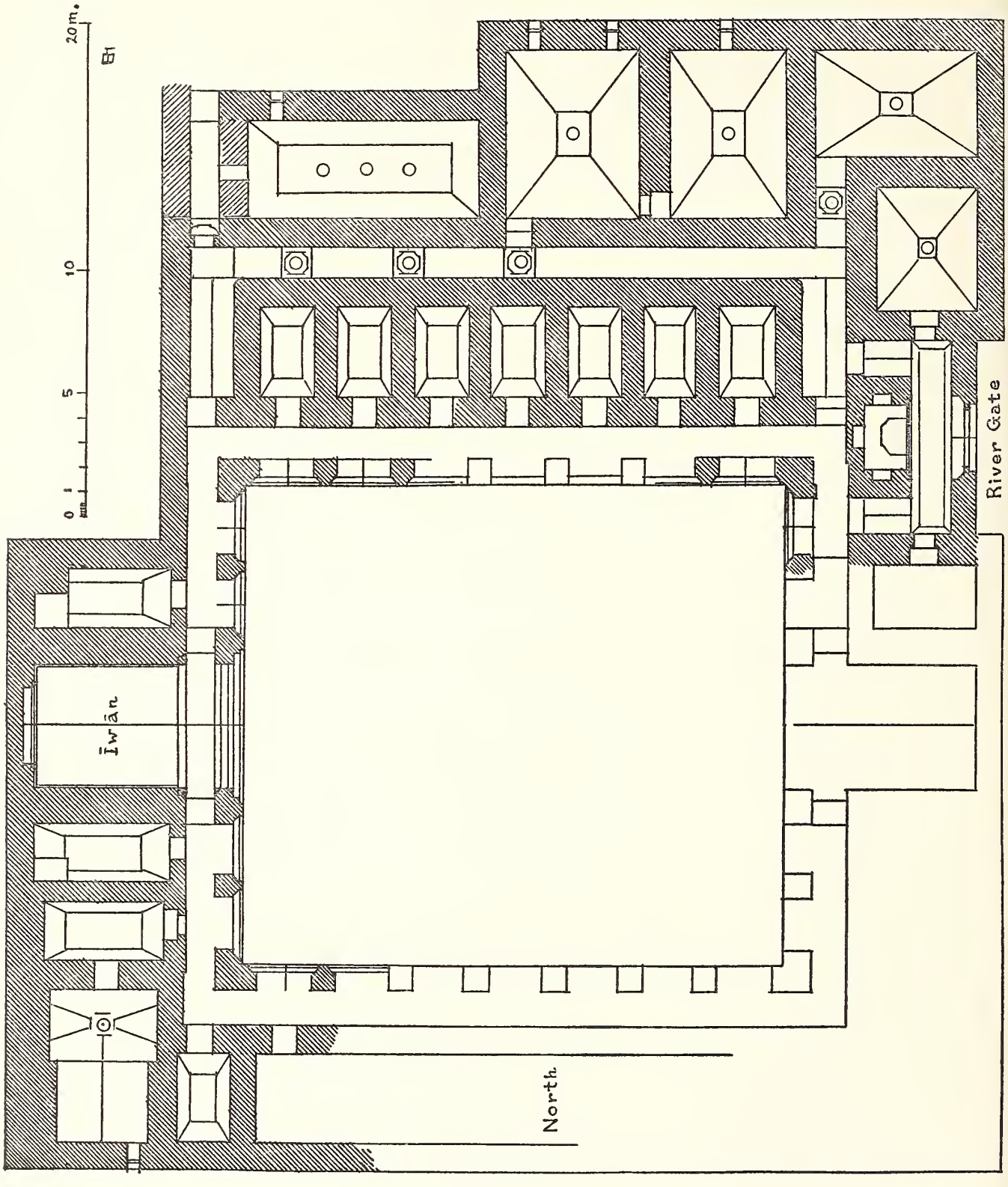


Fig. 19—Baghdad, Palace Inside the Ḳal'a, Plan

into the court, the other has no issue. The scheme was not created at this time, but was old and obligatory. It first appears in the third of the three gateways of the palace of Balkuwārā, Samarra, and is still common to all larger houses in Baghdad.

All the kundjs, the whole corridor behind them, and above all the river gate, are covered by hundreds of muḳarnas, all genuine vaults, mostly planned like the dome of Zubaida. Their rich decoration was cut into the terra-cotta bricks before burning, "en découpage," and their arabesques are the model for the plaster arabesques in some of the turbas of Damascus.

Another feature of this building, important for later Baghdad style, is the use of flat, almost horizontal, cloister vaults, which reveal great virtuosity in vaulting. Further, the high air shafts in the inner corridors, actually without windows, are very well suited to the Baghdad climate. These air shafts occur in Syria, e.g., in the corridors of the Māristān Arghūn at Aleppo, but they are of Iranian origin; they must have been used in the long corridors and many rooms of the harem of Persepolis, which otherwise would be without light and air, and they are just what the Old Persian word raučanam [60] expresses: windows in the roof, not in the side walls.

Sanctuary of Dhu 'l-kifl, Tomb of the Prophet Ezekiel, near Kufa

(*Figs. 61, 70–72*)

Ḥamd Allāh states: "Sultan Oldjaitu (703–16) built a masdjid with a minaret at Dhu 'l-Kifl." [61] Hence, the sanctuary is of the same date as is the minaret.

Inscription 6

There is a fragmentary inscription in brickwork, consisting of two lines of large letters around the shaft of the minaret under the gallery:

١) ـــ لا ـــ السلطان الاعظم غياث الدنيا والدين [خداب]نده محمّد طاب ترابه و تمّ[ت] فى [دو]لة ولده

السلطان ـــ ـــ ٢ ـــ ـــ [ا]لله تعالى وطلبًا لجزيل توابه[ا] الأمير المعظّم العادل ملك الامراء منشى العدل ومقرّره وحا ـــ ـــ

1. . . . . the august Sultan Ghiyāth al-Dunyā wa 'l-Dīn [Khudāb]anda Muhammad, may the earth be light on him, and it was finished under the reign of his son, the sultan . . . .

2. . . . . seeking the proximity of Allah, be He exalted! and demanding His most generous pardon, the exalted emir, the just, the malik al-umarā', the promoter and establisher of justice . . . .

Oldjaitu Khudābanda, the Mongol emperor, died in 716 and was succeeded by his son Abū Sa'īd. In the second line the grand vizier speaks. His name would allow one to supply the lost date, which must be immediately after 716 H. (1316 A.D.). Since the formula is royal, the building must have been ordered by the sultan.

[60] Arabic rawshan or rawzan, normally the large bay windows in the upper stories of Iraqian houses; once used, by Ibn Shaddād, to describe a "lantern" on the dome in Mashhad al-Ḥusain, Aleppo.

[61] *Tārikh-i Guzīda,* ed. E. G. Browne, Gibb. Mem. Ser. (London-Leyden, 1910), XIV, 60.

In 1924 I copied and photographed, in Čihil Sutūn at Isfahan, a long parchment roll, megilla,[62] purporting to be the original of the treaty between the Caliph Ali and the Christians of Dhu 'l-Kifl at the time of the conquest, attested as authentic by many mudjtahids of Shah Abbas the Great. And yet it is a patent fake, made about 700 H. (1300 A.D.). Ghazan had decidedly favored Judaism, which led to a violent outbreak of antisemitism after his premature death. His brother Oldjaitu, first converted to Christianity, then hesitating between Ḥanafite and Shāfi'ite doctrines, embraced the shi'a creed only about 713; his mihrab in the Great Mosque of Isfahan is the monumental evidence. The grand vizier and historian Rashīd al-Dīn was openly accused of inclining toward Judaism. As long as the sultans were indifferent in religious matters, Muslims, Christians, and Jews fought for the possession of similar sanctuaries. Such a fight was waged for the sanctuary of Khiḍr Iliyās (St. Elias) or Mar Behnām in Assyria by the great Bishop Gregor Abu 'l-Faradj. Today, Dhu 'l-Kifl is a Jewish sanctuary and—once a mosque always a mosque—since conversion of a mosque into a non-Muslim sanctuary is impossible under Muslim rule, Ḥamd Allāh's assertion that "Oldjaitu took the guardianship of the shrine from the Jews and gave it to the Muslims" is subject to doubt, in spite of the fact that a minaret does not fit a Jewish shrine and that the inscription was written after Oldjaitu's death by the Muslim Abū Sa'īd. At any rate, the faked document produced by the Christians must have been rejected and deposited in the Mongol archives at Isfahan. It was old when the mudjtahids of Shah Abbas believed it to be authentic.

Imāmzāde Mīr Muhammad, on the Island of Khārg in the Persian Gulf

(*Figs. 64* and *66*)

The small island of Khārg is full of antique catacombs[63] and in the midst of them the shrine rises, evidently a sanctuary of pre-Muhammadan origin; Mīr Muhammad is the vaguest possible name.

In the background of the entrance of the simple building part of its original decoration is preserved, a rich mosaic of glazed tiles of the kind known from monuments of the Mongol period, about 700 H.

Inscription 7

On a frieze over the lintel of the door, under a muḳarnas semidome is an inscription in one line, in Neskhi, with a quotation from the Koran (XLIII, 68 and 69), referring to the day of resurrection. The date at the end is lost. The signature of the architect is in small letters in the uppermost cell of the vault:

عمل سيّد علىّ بن أمير حسين البخارى

Work of sayyid Ali b. emir Husain, from Bukhara.

[62] E. Herzfeld, "Einige Bücherschätze in Persien," *Ephemerides Orientales* (Oriental Book List of Otto Harrassowitz), No. 28 (January, 1926), 3–5.

[63] *Idem, Archaeological History of Iran* (London, 1935), Pls. 18–19.

An architect may be a sayyid, but scarcely the son of an emir. The man is from Bukhara, in Turkish territory, and there, titles no longer had their original values.

Figure 64 shows the dome rising high above the roof of the shrine. I preferred not to enter the shrine and have no plan of it. It is clearly evident to which type it belongs.

Bābā Munīr

(*Figs. 20* and *67*)

This mausoleum of a Sufi is in the mountains between Fahliyūn and Gannāwa, north of Bushire.

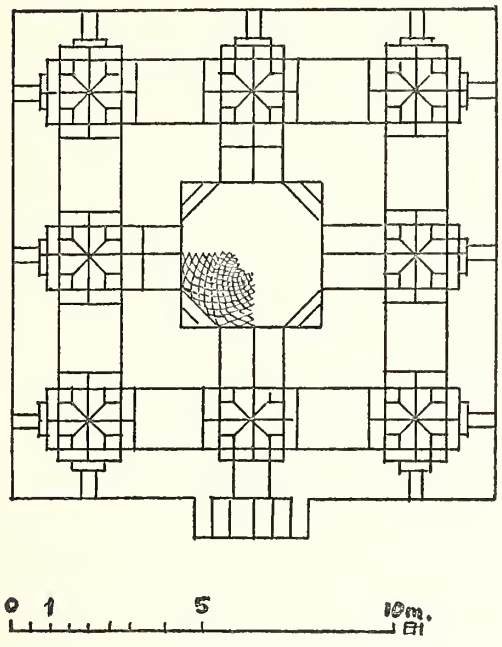


Fig. 20—Bābā Munīr, Plan

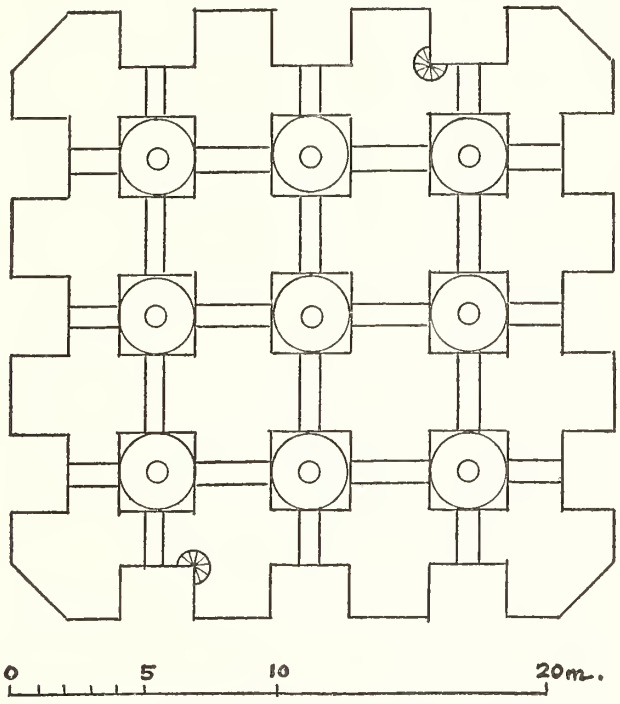


Fig. 21—Kaleh-i-Kuhna, near Sarpul, Plan

A wooden cenotaph in the central room is inscribed with a long poem in Persian. The verses contain the name Khwādja Shams al-Dīn Muhammad b. Muhridj (?) Pīrūzī, and the date 895 H. (1490 A.D.) in cyphers and cryptogram. I am not convinced that this man is the saint Bābā Munīr himself, and would date the building about a hundred years earlier.

The square plan with a square room and the tomb in the center, and a vaulted corridor, a Greek krypta on the four sides, is in principle the plan of all the great shi'ite mashhads, such as Najaf, Karbala, Samarra, Kum, and Meshed. The krypta is needed for the circumambulation of the holy place, a rite pre-Muhammadan and common to Zoroastrianism, Buddhism, and other religions.[64] Thus the plan is the Muhammadan interpretation of the Sasanian fire temple.

[64] Term peculiar to Zoroaster, often in gāthās, parijasa-circumambulate.

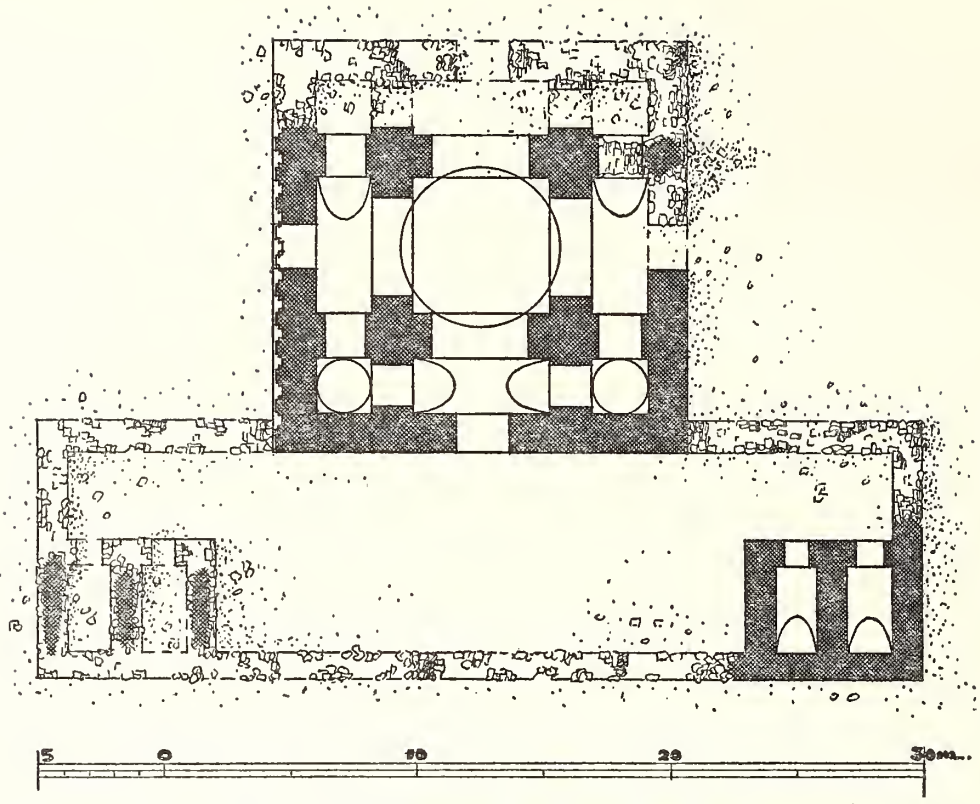


FIG. 22—FIRE TEMPLE IN THE DISTRICT OF GIRA

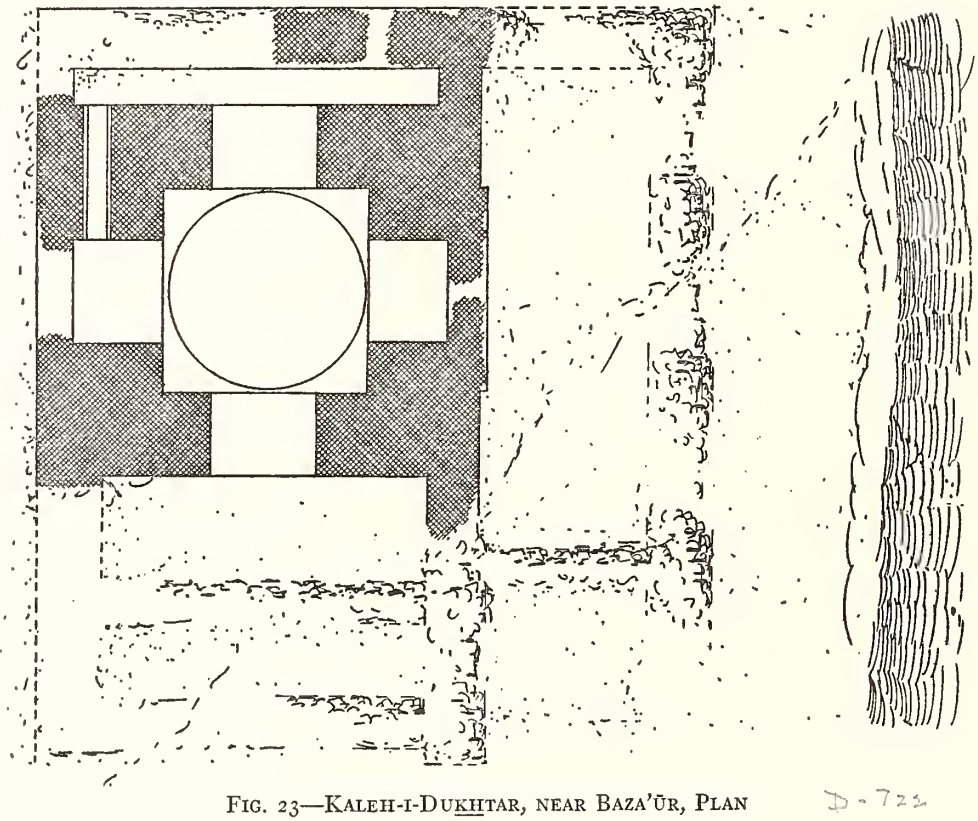


FIG. 23—KALEH-I-DUKHTAR, NEAR BAZA'ŪR, PLAN

Kaleh-i-Dukhtar, near Baza'ūr

Figure 23 gives as an example the Kaleh-i-Dukhtar, near Baza'ūr between Kā'īn and Nishapur, Khurasan.[65] I quote from my diary:

March 25, 1925 at Ribāṭ-i-Safīd: Came over a high djulga (valley) with a village called Baza'ūr (or -' ūl); in the registers of the mālīya at Mashhad I found boluḳ pēwa-zhan with ribāṭ-i-safīd and B'ZH-'VR, explained to me as bāzah=djulga and 'ūr=barhana, "naked valley," a popular etymology only, since Istakhrī and Ibn Ḥawḳal write buzdīghūr (many variants), Yāḳūt, buzdīghara; evidently an old Parthian name with *zd*>*z* and *r*Θ, Θ*r*, or *rd*?>*r*, *l*. Near this village I saw unreported Sasanian ruins, one below, called kaleh-i-dukhtar, the other high on a hill behind, called kaleh-i-pisar (the girl's and the boy's, or the princess' and the prince's castle). The upper ruin is a "high place," a terrace, the lower a domed building of undressed stone in strong mortar—no bricks. The four arches spring, neither salient nor re-entrant, from the surface of the piers. A high ellipsoid cupola with a round opening "window" at the summit, and four small windows in the normal axes at the springing line. These four windows had horizontal lintels of wood. At the corners the huge dome is supported only by short, rough beams; there is no squinch. Since the thickness of the dome is less than the diagonal distance from the corner, a small hole remains, closed from below with plaster, originally shaped like a very flat pendentive or bracket.[66] The relation of the walls to the span is 2.9:9 m.

Of all the Sasanian domes this one represents the most primitive type, but it would be wrong to base the dating on that fact. The combination of domed building below and terrace on the top of the hill proves this building and others of its type to be fire temples. The Arsacid temples so far known, three at Shahristān and one on the Kūh-i-Khwādja in Sistan, belong to the same type. Figure 22 adds the čārtāḳ, tetrapylon, a fire temple in the district of Gira in southern Fars, of the fifth century A.D.[67]

Kaleh-i-Kuhna, near Sarpul

In Bābā Munīr the old plan has assumed a peculiar form that looks more like a game board than the plan of a building. Figure 21 compares it with the plan of a Sasanian structure, called Kaleh-i-Kuhna, "the old castle," near Sarpul on the Baghdad road, about 600 A.D. It is almost twice as large as Bābā Munīr. Its purpose is unknown, but it is certainly not a tomb. It may be the oldest example of an interesting group, a palace on a substructure, like Hiraḳla near Rakka, built by Harun al-Rashid.[68] A similar plan must have been used in the palace of Ḥadjdjādj b. Yūsuf at Wāsiṭ, called al-Khaḍrā', "the green (i.e., blue)" dome, described by Yāḳūt,[69] perhaps itself an imitation of the Khaḍrā' of the Umayyads at Damascus.[70] The next example is the Ḳubba al-Khaḍrā' of al-Manṣūr in the "Round Town" of Baghdad, and,

[65] Herzfeld, *op. cit.*, Fig. 11, pp. 88 ff.

[66] The same function is fulfilled in the Damascus turbas by small plaster brackets.

[67] Herzfeld, *op. cit.*, Figs. 12–13, pp. 91 f.

[68] *Arch. Reise*, I, 161–63, p. 25, Fig. 71; cf. K. A. C. Creswell, *Early Muslim Architecture* (Oxford, 1940), II, 165 f.

[69] Yāḳūt, *op. cit.*, IV, 881–88.

[70] See G. Le Strange, *Palestine* (London, 1890), index s.v. Damascus, Khaḍrā'.

a few years earlier, the Dār al-Imāra of Abū Muslim at Merw, described by Istakhrī and Ḥamd Allāh.[71] The middle parts of the great palaces of Samarra—Djawsaḳ, Balkuwārā, and Dja'farī—are evidently connected with this plan. An example from the region of Merw, probably not later than the third century H., is the ruin *Ḳyrḳ Ḳyz, "forty maidens," near Tirmidh* (*Termez*), of which I here reproduce the plan (*Figs. 24–25*), made by Zasypkīn, because the publication is scarcely known to any non-Russian student.[72]

The two designs on Figures 20 and 21 show that two objects of entirely unconnected origin and designation have been treated, in 600 and in 1400 A.D., in a way that makes them appear closely related. This shows a striking neglect of practical considerations and a prevalence of aesthetic principles, for nothing else can be the assimilating force, and nowhere is the urge for multiple symmetry so strong as in Iran. By about 500 B.C. it already dominates artistic conceptions and goes on being a determining factor.

The octagon over the central room rises higher than the flat roof of the surrounding krypta and is itself surmounted by a high pointed dome in sixteen zones of thirty-two alveoli each. The plan is perfectly regular, an augmentation of the plan of Imām Dūr and Sitt Zubaida. The units are concave alveoli inside, cubes outside. The small conch of the summit bears the Alid symbol of the pandjah, the open palm, in metal.

Tomb of Daniel, Susa

This monument on the shore of the river Karkhā, at the foot of the mounds of Susa (*Fig. 69*), enjoyed celebrity a hundred years ago, then fell into oblivion.[73]

The *Syriac Chronicle*[74] *in* 670–80 A.D. relates:

> The Arabs took Susa. They occupied the house there, called the house of St. Daniel, seized the treasure kept and guarded in it by order of the kings since the time of Darius and Cyrus, and they took and broke the silver sarcophagus, in which lay an embalmed body which many believe to be that of Daniel, others that of Darius.
>
> Abū Ṣabra [leader of the first Muslim conquerors] was told, there is the body of Daniel in this town! He answered: What does that matter to us? and left it in the hands of the inhabitants.[75]
>
> Abū Mūsā al-Ash'arī [successor of Abū Ṣabra, 18 H. (639 A.D.)] wrote to 'Umar b. al-Khaṭṭāb about it, who ordered the body buried. Abū Mūsā wrote back: The corpse had a signet-ring, we kept it! The caliph answered: Use it! And on this stone was the figure of a man between two lions.[76]

[71] Istakhrī, *Viae,* ed. M. J. de Goeje, *Bibl. Geogr. Arab.* (Leyden, 1870), I, 259, and Ḥamd Allāh, *Nuzhat al-Ḳulub,* ed. G. Le Strange, Gibb Mem. Ser. (Leyden-London, 1916), XXIII, 156. See *Arch. Reise,* II, 134 ff.; and Creswell, *op. cit.,* pp. 3 and 30 f.

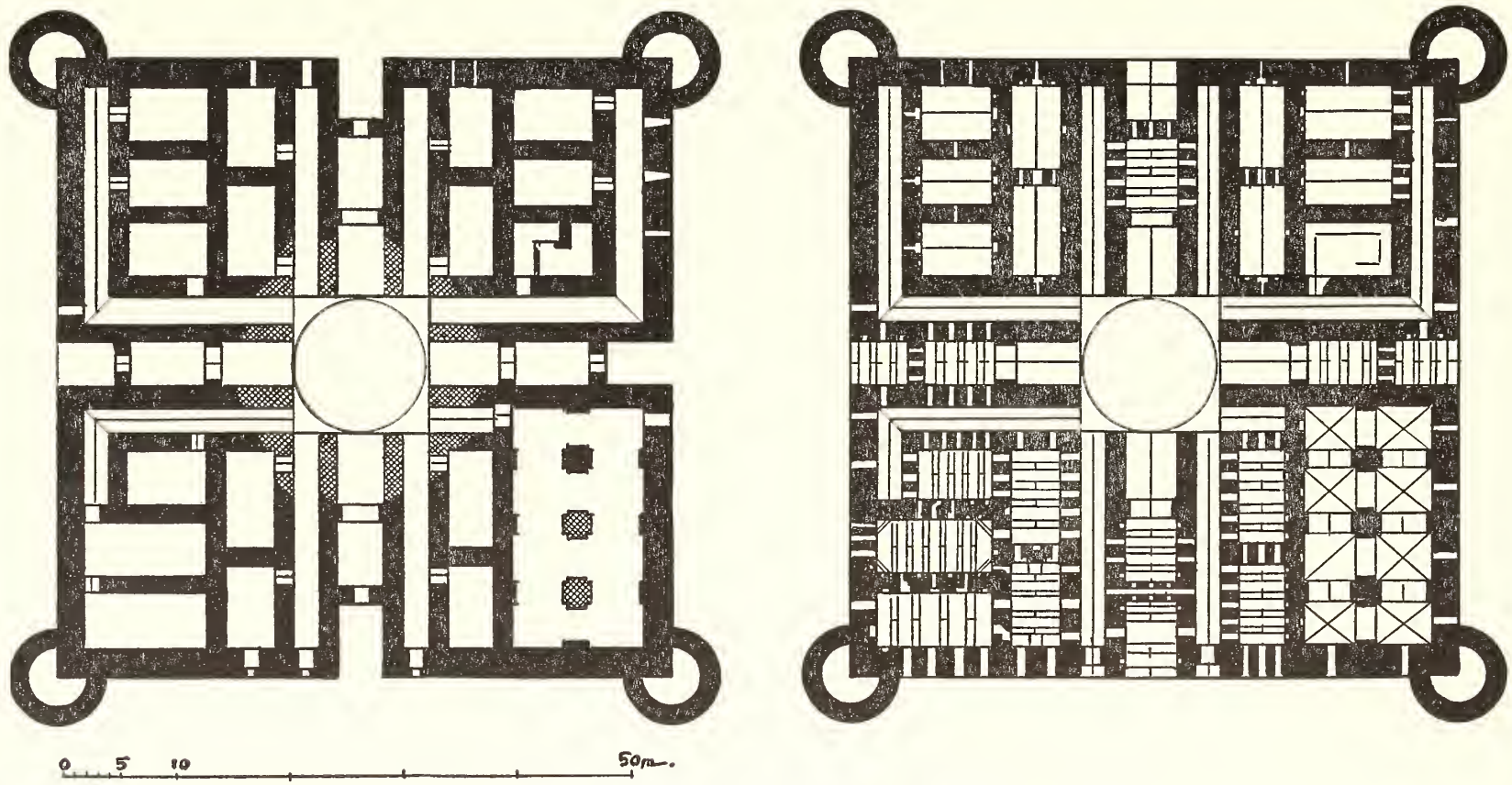
[72] B. Zasypkīn, "Pamiatnīkī Arkhītektury Termezkogo Raĭona," *Kultura Vostoka, Sbornīk Museĭa Vostochnykh Kultur,* II (Moscow, 1928), Figs. 12 and 13.

[73] E. Flandin, *La Perse moderne* (Paris, [1841]), Pl. 100, in 1840–41; A. H. Layard, *Early Adventures* (London, 1887), II, 294 ff., after 1840; C. A. de Bode, *Travels in Luristan and Arabistan* (London, 1845), II, about 1843; K. W. Loftus, *Travels and Researches in Chaldaea and Susiana* (London, 1857), pp. 321 ff., in 1849–52; J. Dieulafoy, *La Perse, la Chaldée et le Susianne, Relation de voyage* (Paris, 1887), in 1881.

[74] T. Nöldeke, trans., "Die von Guidi herausgegebene syrische Chronik," *Sitz. Ber. Kais. Akad. d. Wissensch. phil.-hist. kl. Wein,* CXXVIII, Abh., 9 (1893), 43.

[75] Ṭabarī, *Annales,* ed. M. J. de Goeje (Leyden, 1879–1901), I, 2566.

[76] *Ibid.,* I, 2567.



FIGS. 24–25—KYRḲ KYZ, NEAR TIRMIDH, PLANS

Abū Mūsā saw in the citadel of Susa a curtained room and was told that it contained the body of the prophet Daniel [a later variant, used already by Sir William Ouseley, adds "a prophet, though a minor one"].[77]

The relic was believed to have the power of bringing rain, and all the sources tell miraculous stories. Balādhurī's account fits into Ṭabarī's; he adds: "Abū Mūsā had the tomb dug in the river bed." [77a]

Istakhrī, about 340 H. (950 A.D.) relates with more detail:

I have been told—Allah knows best—that at Abū Mūsā's time a sarcophagus was found in which, they say, lay the bones of the prophet Daniel. The people of a book [Christians and Jews] used to move this coffin from one to the other of their temples in order to obtain rain through its blessings, wherever there was drought [detailed stories]. But Abū Mūsā [objecting to the continuous removal of so venerable a relic] took it, carried it to the river at the gate of Susa, diverted the river through a canal, constructed three tombs of brickwork in its bed, and buried the coffin in one of them. After having shut and covered the tombs, he opened the water gates and let the river flow over the top of their vaults. Thus it does to the present day. But he who dives to the bottom of the water finds there those tombs.[78]

I have omitted the miracle stories about Daniel's role as rain bringer. All later tales amplify and confuse these old ones.

Rabbi Benjamin of Tudela who visited Susa between 1160 and 1173 A.D. dwells, as all the others, on the miraculous power of the tomb and the rivalry of the inhabitants of the two banks for exclusive possession of these blessings. He refers the burial wrongly to "Sindjar Shāhinshāh who ruled over all Persia, overlord of forty-five princes, in Arabic sulṭān al-kabīr [for al-mu'aẓẓam] whose empire stretches from . . . . to Samarkand over Nishapur . . . . to the frontiers of Tibet." That is the great Seljuk Sindjar, who died in 552 H. (1157 A.D.). The rabbi closed his description with the words: "Where the body had originally been kept, a masdjid was built by order of the sultan." That was only a few years before his visit and must be considered as historical, and as the reason for attributing to Sindjar also the much older burial of the relic.

The divergences of these reports are not great; a mummy or a skeleton, with a signet ring, was kept in a metal sarcophagus in a sanctuary and brought out when needed. "In the citadel" seems to be an addition: to choose a different place for the burial would be against religious inhibitions, and the masdjid stands on the river less than 150 m. from the citadel mound. The excavations of Susa have brought to light a burial [79] of the Achaemenian period which fits exactly that description: a skeleton with rich ornaments in a bronze sarcophagus shaped like a bathtub. The engraving on the seal, a man between two lions, is the most common iconographic type of Achaemenian seals. Of course, it was taken as proof that the corpse

[77] Balādhurī, *Futūḥ al-Buldān* ed. M. J. de Goeje (Leyden, 1866), p. 378.

[77a] *Ibid.*

[78] Istakhrī, *op. cit.*, p. 92.

[79] *Mém., Délég. en Perse,* VIII (Paris, 1905), Pl. II, Figs. 67 ff.

was Daniel, hero of the lion's den. Muhammadan notions forbid reburial of such an object with the body. The treasure house of Darius and Cyrus is Syriac historical erudition. The burial under the river may be true. It is an old Muhammadan belief that Joseph—until Moses carried him off—was buried under the Nile in order to let both shores of Egypt partake in his blessings, barakāt, the motif of the stories of Benjamin of Tudela. Alaric, the king of the Goths, was buried under a river: "Nächtlich am Busento lispeln bei Cosenza dumpfe Lieder." On the whole, the story is a good example of the uninterrupted transformation of an immemorial cult, that of an Elamite weather god, from religion to religion.

The last time the minor prophet exercised his power was at my visit in 1928, when Riza Shah Pahlavi had asked me to show him Susa, but decided to rest one day at Dizful. So Farmān Farmā, Fīrūz Mīrzā, Sārim al-daula, the minister of Justice Dāwar—raḥimahum Allāh!—drove over, that day, to Susa. After walking over the ruins, we had an opulent picnic in the vaulted passage around the tomb-chamber overlooking the vast plain. I felt strange and saw a black cloud, the size of my hand, on the western horizon. So I proposed to return, which we did at once. The cloud came up and in less than an hour invaded half of the whole heaven and earth, like a wall of sand and dust, blacker than the thickest London fog. In the early afternoon it was dark night. Then a thunderstorm broke loose with a deluge of rain, like unto the end of the world. It was the end of the journey of the Shah. Next day, the whole province of Khuzistan stood several feet under water, and that condition prevailed for more than a week. I did not tell anybody of Daniel's power, not wanting to be accused of having provoked the wrath of the rain-bringer by our irreverential luncheon.

I had been unable to measure the building, but the plan is similar to that of Bābā Munīr, less regular, perhaps because of the alterations it has undergone. It would require a close study to see whether parts of the structure of Sindjar are still preserved in the present building.

The landscape to which this kind of vault belongs is thus well defined: the middle and lower Euphrates and Tigris down to the Shaṭṭ al-'Arab, Khuzistan and adjacent parts of Fars, and islands in the Gulf. The climate of these lands makes it possible for the unprotected inner structure to be left visible on the exterior, and that apparently is the original condition. The same kind of vaults, but covered by a protecting cone or pyramid, often a fluted one, occurs farther to the north, over the Djazīra, Sindjār, Mosul, and Sheikh 'Adī, the great Yazīdī shrine near Zākhō, east of the Tigris.[80] Figure 26 gives a better plan of *Sheikh 'Awn al-Dīn, at Mosul,* than does my old one.

The Shrine of Sheikh 'Abd al-Ṣamad, at Natanz

This species of dome, not the semidome nor the muḳarnas in general, is almost un-

[80] Some examples can be seen in *Arch. Reise*: Mosul, 'Awn al-Dīn (*ibid.*, II, 263, Pls. IC, C); Nabī Shīth (prophet Seth) (*ibid.*, II, Fig. 227). I believe one of the richest examples is in the Great Mosque of Mosul (Djāmi' Nūrī) (cf. *ibid.*, II, 226), but it lies in almost complete darkness; Sindjār, Pīr Zekker (Zachary) (*ibid.*, II, 313), a late specimen with cubes instead of cells. Compare the dome in the Ulu Djāmi', Van, illustrated in a later section of this study.

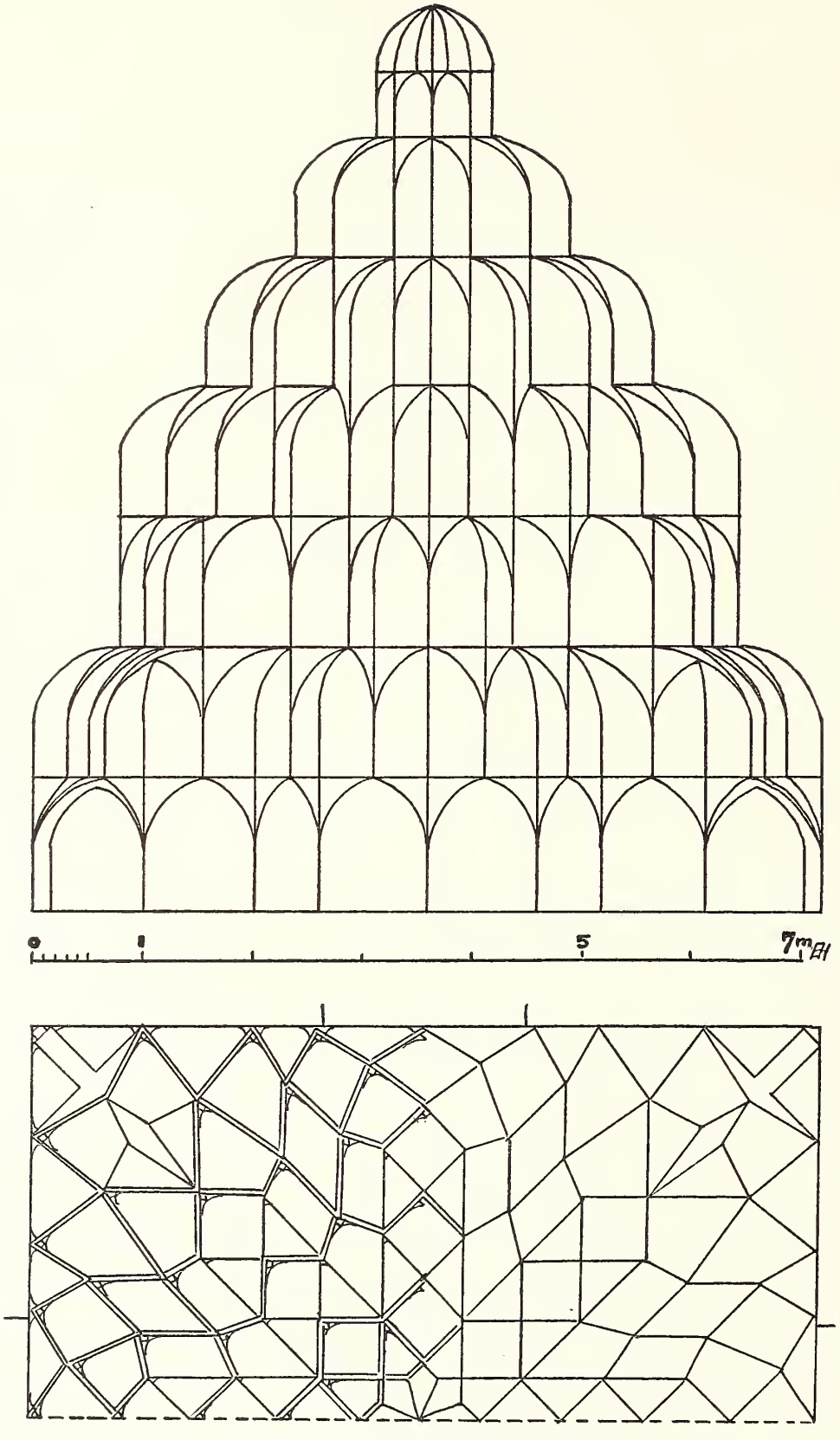


Fig. 26—Mosul, Sheikh 'Awn al-Dīn

known in Iran proper. Among the great many domes of the sixth and seventh centuries, there is, first, one small vault in the Great Mosque of Abargōh, constructed on an octagon over four arches. It is very simple, but may have a kind of latent cross over the main axes. The building appears to be late Seljuk. The other and the only elaborate example is the vault over

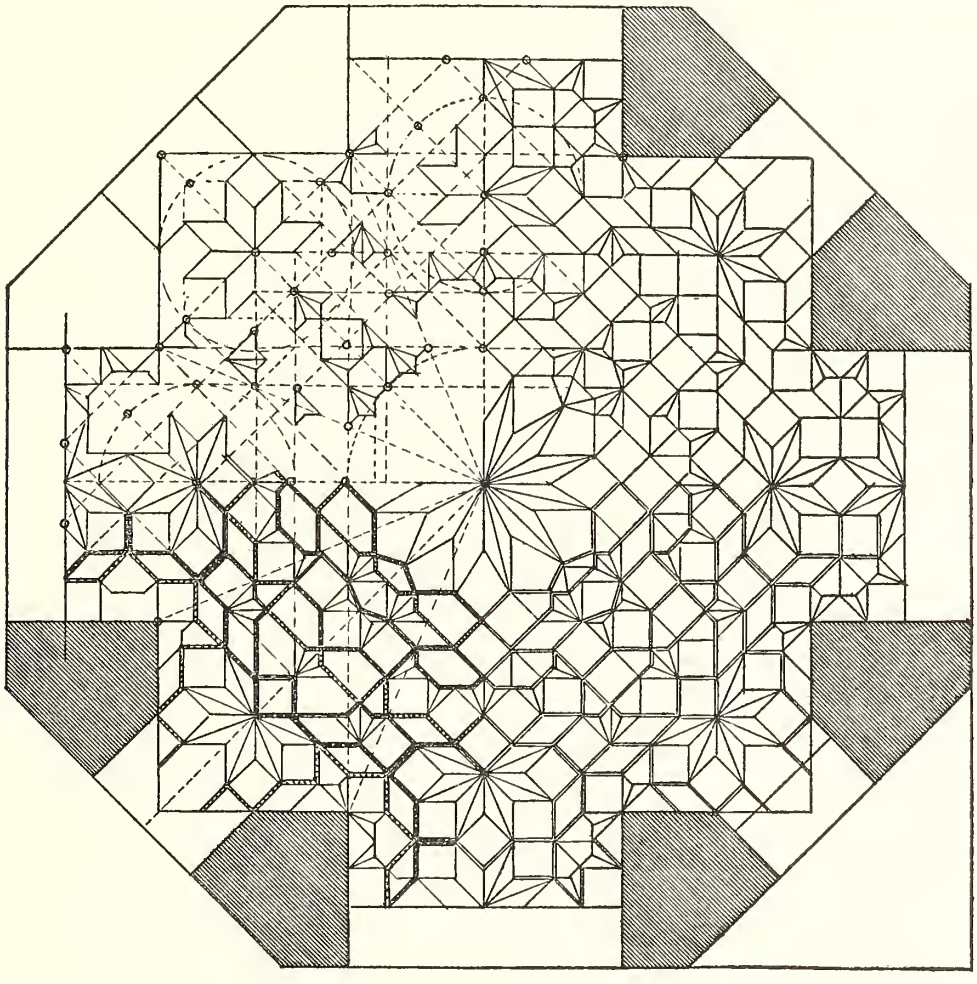


Fig. 27—Natanz, Shrine of Sheikh 'Abd al-Ṣamad, Vault

the shrine of Sheikh 'Abd al-Ṣamad, at Natanz (*Fig. 27*), dated 707 H. (1307 A.D.). The room is square, but deep recesses in the normal axes make it almost cruciform. Four large windows are set in those axes, four slightly narrower ones are set in the diagonals. The vault rests on eight piers, leaving the corners open, a striking proof of the Iranian architects' notion about statics. The plan, with all its intricacies, is a clear design. The diagonal span of the corners equals that of the axial windows. The radii of the octagon, the lines that connect in horizontal projection the angles of the piers, some lines connecting their intersections, and some subdivisions determine every single point of the plan. Only angles of 90° and 45° are used for the eight, sixteen, or thirty-two elements of each zone. The summit is a twelve-pointed star, its

diameter being the width of the arch over the larger windows. Corresponding stars with eight points occupy the four diagonal corners, from which they derive their size, and the same stars are put over the bays of the four main windows. A rather lavish and very clever use of projecting brackets does the rest. It is not unusual to repeat the motif of the center in the corners; most surface-covering decorations do so. But the way the stars and brackets are here woven into the network is thoroughly Persian; vaults of other types are treated in the same way.

This is not a naïve work like many of the domes discussed herein, but the masterpiece of an "art savant." The same quality, in lesser degree, distinguishes the dome of the madrasa at Damascus from that of the māristān. Here, however, the whole vault is not only "false vaulting," corbeling, but a sham: the muḳarnas work is made of plaster, suspended and glued to the smooth surface of an outer vault. The two vaults of the māristān are similarly constructed, and it is the regular technique in modern Baghdad.[81] But all the vaults that show the interior construction from outside are genuine brick vaults. Although their zones project by corbeling each of the cells is a small but real vault. Certainly, the style started in genuine brickwork, and plaster is only an easy and cheap surrogate for the original, more difficult technique. Thus, this only Iranian specimen, far from proving the Iranian origin of the type, disproves it. Iraq has always, at least since the Achaemenian epoch, been deeply influenced by artistic movements originating from Iran, just as its dialect is full of Persian loan words. Therefore, it is important to note a retrograde movement: one must not underrate Baghdad, seat of the caliphate and one of the seats of the Seljuk sultanate, as a cultural center down to its conquest by Hūlāgū in 656 H. (1258 A.D.). To underrate Baghdad is to underrate Rome.

THE MADRASA

Madrasa Al-Nūrīya Al-Kubrā'

(Figs. 10, 28, 41, 45, 60, 74–77)

Ibn Djubair writes: "One of the finest colleges in the world is the Madrasa of Nūr al-Dīn . . . . in it is his tomb—Allah illuminate it! It is a palace among palaces. Water runs through it and falls into a tank."[82]

Ibn al-Athīr says: "Nūr al-Dīn [born 17 Shawwāl 511 (February 11, 1118)] died the 11 Shawwāl 569 [May 15, 1174] and was buried in the madrasa which he had founded at the

[81] O. Reuther, "Wohnhaus in Irak," *C. Gurlitt's Beitr. z. Bauwissenschaft,* XVI (1910), 105 f. Abb. 251 a-c.

[82] Ibn Djubair, *op. cit.*, p. 286. In his intolerably flowery style:

ينصبّ فيها الماء فى شاذروان وسط نهر عظيم تمّ يمتدّ الماء فى ساقية الى أن يقع فى صهريج كبير وسط الدّار

Sūḳ al-Khawwāṣṣīn, bazaar of the basket-makers." [83] Ibn Khallikān says: "At the gate of the bazaar . . . ." [84] Nu'aimī [85] confirms this note. Ibn al-Athīr says further: "And he built many colleges for the Ḥanafites and Shāfi'ites." [86]

Two or three more madrasas of Nūr al-Dīn are occasionally mentioned at Damascus, but do not exist any longer: (1) The Ḥanafite Madrasa al-Nūrīya al-Ṣughrā', the "small" one, situated inside of the Bāb al-Faradj, between citadel and Great Mosque, at the side of the Madrasa al-'Imādīya, opposite the Dār al-Ḥadīth al-Nūrīya, near the bath of al-Ḳuṣair. Its masdjid is separately mentioned. (2) The Mālikite Madrasa al-Nūrīya, in the "Goldstone" quarter, also with a masdjid. (3) The Madrasa al-'Imādīya, usually attributed to Nūr al-Dīn's son 'Imād al-Dīn, but by Ibn Shaddād to the father. Nu'aimī and Ibn Baṭṭūta both call the great Nūrīya simply a "Ḥanafite" madrasa, whereas it is Shāfi'ite and Ḥanafite. Thus, possibly, the Mālikite Nūrīya was housed in the same building.

Inscription 8

On the four sides of the stone cenotaph, one line, twice 130 and twice 260 cm., 45 cm. high, large characters in relief, Neskhi nūrī, unpublished:

a Koran, XXXIX, 73 هذا قبر الشهيد نور الدين بن زنكى b. رحمه الله ـ

This is the tomb of the martyr Nūr al-Dīn b. Zengī, Allah be merciful to him!

The Koranic verse, often used on tombs, e.g., that of Faḍā, wife of Khālid b. Walīd in Ḥimṣ, speaks of the welcome given to the pious when entering paradise. The simplicity of the style is genuine and important to note. The large frieze in similar script on the four walls of the room under the dome contains the āyat al-kursī.

On the lintel of the outer door is an inscription of six lines; the text, taken from van Berchem's notebook, is given in the *Répertoire:*

Al-malik al-'ādil, the ascetic, Nūr al-Dīn Abu l'-Ḳāsim Maḥmūd b. Zengī b. Aḳsonḳor—Allah double his award!—has ordered this blessed college to be founded. He gave as endowment for the disciples of the imām . . . . Abū Ḥanīfa . . . . (follow the detailed provisions) and that (was done) in a period ending with Sha'bān 567 [April 1172].[87]

Over the second door there was an almost identical inscription, published in the *Répertoire* from van Berchem's copy (Notebook, II, 120), which may be simply an emended copy from the old receuil Schefer and Sauvaire (No. 238). The passage concerning the waqf begins:

And he gave as endowment for this madrasa and for the turba which he built in it for himself, and for the students and professors of Law . . . . that follow the rite of the imām al-Shāfi'ī . . . .

[83] Ibn al-Athīr, *op. cit.*, IX, 264.
[84] Ibn Khallikān, *op. cit.*, No. 725, p. 92.
[85] *J.A.*, 1894, p. 288.
[86] Ibn al-Athīr, *op. cit.*, XI, 267.
[87] *Répertoire*, IX, 66–67, No. 3293.

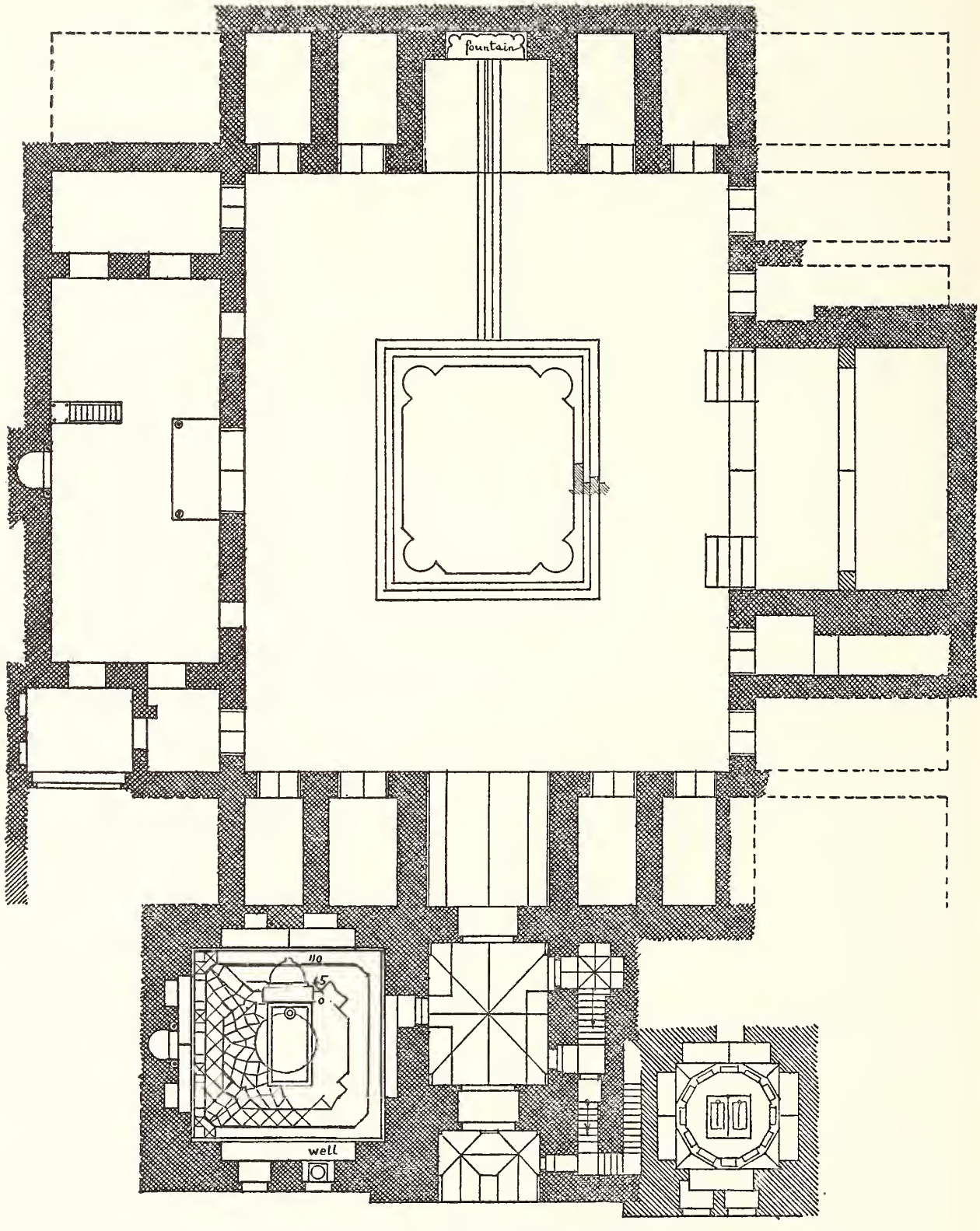


FIG. 28—DAMASCUS, MADRASA AL-NŪRĪYA AL-KUBRĀ', PLAN

The date is the same. But the text inserts after "blessed madrasa" and before al-malik al-'ādil the words mawlānā al-sulṭān "our lord, the sultan." Now, Nūr al-Dīn was not and never aspired to be sultan, and if these words were (or are?) actually written, the inscription cannot be the original one, but only a later substitute, written when the title sultan was a matter of course.

The inscription 3310 which the *Répertoire* publishes under the headline "Damas, Māristān Nūrī, sur la porte d'entrée" (see above p. 4), probably occurs on the door of the madrasa; its style is that adopted by Nūr al-Dīn after 558.

Glory to our lord al-malik al-'ādil, fighter of the Holy War, soldier, the assisted (by Allah), triumphant, victorious, Nūr al-Dīn, the pillar of Islam and the Muslims, the animater of Justice in the worlds, the defender of Truth through the proofs, the giver of justice to the oppressed against the oppressor, the killer of the infidels and polytheists, Abu 'l-Ḳāsim Maḥmūd b. Zengī b. Aḳsonḳor, nāṣir amīr al-mu'minīn, Allah make everlasting his reign!

Since 1914, the time of my survey, nothing has been published about this madrasa but Sauvaget's description:

Le plan est ancien, mais la presque totalité de l'édifice est récente dans son état actuel. Portail à clef pendante. Au fond de la cour, īwān avec voûte d'alvéoles. Bassin d'un type inusité. La partie la plus intéressante est la salle du mausolée, qui renferme le tombeau de Nūr al-dīn et qui est couverte par une coupole d'alvéoles de style mésopotamien [88] semblable a celle de l'hôpital (n. 17). L'extrados de cette coupole est visible des terrasses de l'édifice.[89]

The assertion "recent almost in its totality" is a serious error bound to produce others. Apart from ugly whitewash, uglier oilpaint, widening and changed forms of some doors and windows, perhaps renewal of the flat roof in the prayer hall and the large īwān, the original shape, from foundation to roof, of the whole building is unchanged.

The interior court measures 16.6 by 20.6 m. (relation 4:5). The tank, 6.5:7.8 m. (relation 5:6), has the canonical form, but has an unusual connection, by means of a channel, with the fountain in the back wall of the west īwān, where the water pours out of a niche with archaic muḳarnas (no photograph or drawing taken), which reminded me of the beveled edge at the Ḳaṣṭal al-Shu'aibīya, built in 545 by Nūr al-Dīn. Ibn Djubair described this same fountain and tank in 580. A similar arrangement is found in the *Madrasa al-Ḳāsimīya at Mārdīn,*[90] of which Figure 29 gives the plan made by S. Guyer in 1911, on his return from Samarra.

[88] Means "Iraqian"; "Mesopotamian" a term to be strictly limited to the northern region between Euphrates and Tigris, ancient Subartu and Assyria, Roman province of Mesopotamia, Arabic Djazīra consisting of Diyār Rabī'a = Mosul, Diyār Bakr = Āmid, and Diyār Muḍar = Rakka. During its long history, it has always been naturally and culturally distinct from the south, Babylonia = Iraq.

[89] Sauvaget, *op. cit.*, No. 22.

[90] There are three old madrasas in Mārdīn. The inscriptions of the one, al-Rashīdīya, have been collected by M. von Oppenheim and Gertrude Bell; Guyer made no remarks about inscriptions in this second madrasa which he calls Ḳāsimīya. The founder, Ḳāsim, is not one of the princes of Mārdīn, hence, the date remains uncertain.

The front on the street, east side, has a monumental entrance: a bay with an outer door, an inner doorway (Persian, dargāh), a second door, and an inner īwān (*Figs. 75–77*). The disposition is the same in the māristān. The entrance vault is not really a "clef pendante," for the flat arch that supports it belongs to the original structure. This rare vault will be studied together with the two other examples at Damascus, the ʿĀdilīya and the Ḳilidjīya. The cross vault of the dargāh is old, so is the twelve-lobed niche in the tympan, the rare broken horseshoe arch over the little door that leads into the tomb chamber, and the benches below with their old-fashioned small molding. The original design remains intact.

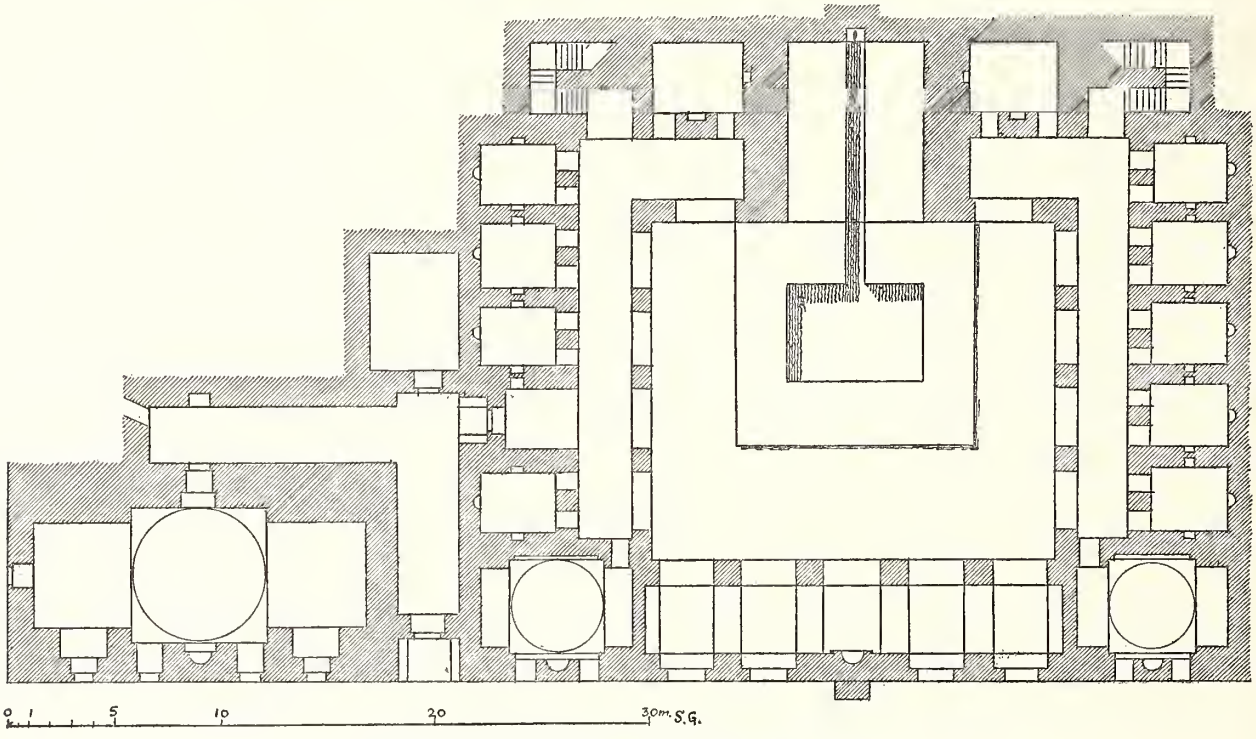


Fig. 29.—Mārdīn, Madrasa al-Ḳāsimīya, Plan D-159

Left of this entrance is the tomb chamber (*Fig. 74*) whose dome has been discussed. It measures 6.64 by 6.67 m.[91] The mihrab in the south wall has two antique colonnettes; in the northern one of the two windows is a small well. Oil paint of the worst taste disfigures the masonry of the interior, but I did not observe any material alterations.

On the right of the entrance hall a staircase leads up to the living rooms of the upper story. A great number of such chambers, in which students and professors live, is essential for a madrasa. Madrasas share all other features with mosques, ribāṭs, caravanserais, but

[91] 664:1660 = 2:5; 1660:2060 = 4:5; 650:780 = 5:6. The large cenotaph measures 130:260 cm., rel. 1:2, on a base projecting 13 cm. on each side. I drew the plan, but the measurements were taken by F. Rauschenberger, a young architect killed early in the war, in 1914. These few numerical relations are enough to recommend the exact measuring of the whole building with the purport of establishing the value of the cubit used in it.

this distinguishes them as a species within the larger genus. In Syria as well as in Baghdad and Iran, whereas the larger rooms in the normal axes occupy the full height of the buildings, those chambers at the corners are usually arranged in two stories. A second domed chamber, north of the entrance, with a pair of windows on the street, does not form part of the Nūrīya, but of a Madrasa al-Nadjībīya, tomb of the emir Djamāl al-Dīn Aḳḳush al-Ṣāliḥī, lieutenant of Damascus for Baibars in 660, who died in Cairo in 677. Nu'aimī [92] especially mentions these windows.

The entire breadth of the south side of the court is occupied by the prayer hall with a flat roof and an old mihrab. As in other buildings of Nūr al-Dīn, e.g., Maḳām Ibrāhīm, Aleppo citadel; 'Ādilīya, Damascus, its narrow sides communicate with small lateral rooms by a pair of doors. It opens on the court by a group of three bays, originally without doors, the middle one being the largest. All masdjids of the period of Nūr al-Dīn in Syria have this group of three openings. The masdjid in the Madrasa al-Nūrīya is expressly mentioned by Ibn Shaddād (Nu'aimī). About half the width of the opposite side of the court is taken by an īwān, 8.25 m. wide, 7.6 m. deep. A barrel vault of such span could not have been put on walls only 0.87 m. thick; in the māristān where flanking vaults partly neutralize the push of the barrels, walls 1.48 m. thick are judged necessary for 4.98 m. span. One must assume a flat ceiling from the beginning. Only the arch at half of the depth of the īwān is a recent addition.

The smaller īwān with fountainhead on the west side, 4.45 m. wide, 3.9 m. deep,[93] has already been mentioned. The architectural motif of the façades, except the south side, is executed in good masonry, and shows clearly through the plaster and whitewash of today. It consists of high pointed arches, divided in two stories by a low-crowned arch (bridge). The lower parts were open or shut by doors; in the upper part were one or two windows, most of them widened and replaced by recent repairs. The entire system is evidently taken from the elevation of the main entrance with its flat arch under the pair of windows at both sides of the suspended "clef." Similar treatment of the walls can be observed in the contemporary madrasas at Aleppo and in the 'Ādilīya, Damascus. The small rooms were partly inaccessible to us and may be irregular.

The plan as a whole has no regular geometrical shape. This was the rule, at that time, with buildings in the crowded cities. Ibn Djubair says Damascus, the largest town of the Muslim world of his days, was so densely populated that most houses had three stories. The streets were crooked and angular, the premises extremely small, and a tiny corner may have been a separate lot, not belonging to a large building. Such conditions are reflected by the story of Khusraw the Just, who did not evacuate an old woman from her hut when he built his enormous palace. Although a legend, it is true to life. Ibn al-'Adīm tells how scrupulous Nūr al-Dīn the Just was in such a case:

The southern half of the east hall of the Great Mosque at Aleppo was a bazaar, waqf for the

[92] *JA.*, 1894, p. 444.

[93] 3.9 m. is half the length of the tank (7.8 m.): 4.45 is two-thirds of the side of the tomb chamber (667).

mosque, the plan of which was not a complete rectangle. Nūr al-Dīn wished to annex this part and consulted the jurist ʿAlā al-Dīn ʿAbd al-Raḥmān al-Ghaznawī who declared the annexation to be lawful. I myself have read the fatwā in Ghaznawī's handwriting. Nūr al-Dīn, accordingly, demolished the bazaar and annexed it to the mosque, which gained much in space and beauty.[94]

Before going into the problem of the origin of the "cruciform plan," some more material will be presented.

Madrasa al-ʿĀdilīya al-Kabīra [95]

Northwest of the Great Mosque . . . . opposite the entrance of the Ẓāhirīya [i.e., the mausoleum and library of Ẓāhir Baibars, a description sufficient for identifying the building, which itself has no inscriptions]. The first to build it was Nūr al-Dīn Maḥmūd b. Zengī, but he died before it was finished. Thus it remained; later, malik al-ʿādil Saif al-Dīn b. Ayyūb, brother of Saladin, erected part of it . . . . He died Djumādā II, 7, 615 (August 31, 1218) . . . . and was buried in the ʿĀdilīya. His son malik al-muʿaẓẓam ʿĪsā finished it and endowed it with waqfs. In 619, he buried his father there and called it after the name of this king . . . .[96] The turba was finished only in 620.[97]

Djamāl al-Dīn al-Miṣrī, however, was professor at the ʿĀdilīya already in 619.

Every word of the literary tradition is confirmed by the state of the building. It has no inscriptions, although the framed panels are prepared to receive them. As in many other instances,[98] this indicates that the founder died before its completion. One may call that a rule. The plan is a replica of that of the Nūrīya, and it was probably designed by the same architect. If it were not for the greater size of the tomb chamber and its extending through to the inner court, one could mistake one plan for the other. The entrance has actually the "clef pendante" that the architect of the Nūrīya tried to achieve. The façades of the court [99] in their sound and simple masonry result from similar ideas. Therefore, the plan of the ʿĀdilīya belongs to the years 567–69;[100] after an interruption following the death of Nūr al-Dīn, the building was finished in all essentials in 615; after a second interruption following al-ʿĀdil's death, it was finally completed in 619. The endowment was given entirely by malik al-muʿaẓẓam ʿĪsā.

The differences between the two plans are negligible: in the ʿĀdilīya the court is square, the tomb chamber is larger, and there is no fountain in the west īwān. But the identity extends to details like the pair of doors in the side walls of the prayer room. This room,

[94] In Ibn Shiḥna, *Durr,* p. 63.

[95] The plan of the madrasa al-ʿAdilīya al-Kabīra will be published in the next installment.

[96] *JA.,* 1894, pp. 423 f.

[97] Nuʿaimī, *JA.,* 1894, p. 485, n. 251.

[98] E.g., Aleppo: Ẓahirīya, Sharafīya, Kamālīya; Damascus, Ṣāliḥīya: Ṣāḥiba; Damascus, town: Dār al-Ḥadīth al-Nūrīya; with restrictions: Aleppo, Sulṭānīya, and others.

[99] See Creswell, "Cruciform Plan. . . .," Pl. II, photographs taken in 1918–19, while the building was being restored and prepared to become the National Museum. My surveys were made in 1914, before restorations.

[100] Since Nūr al-Dīn would scarcely have begun a second mausoleum for himself, the tomb chamber must be attributed to a second period.

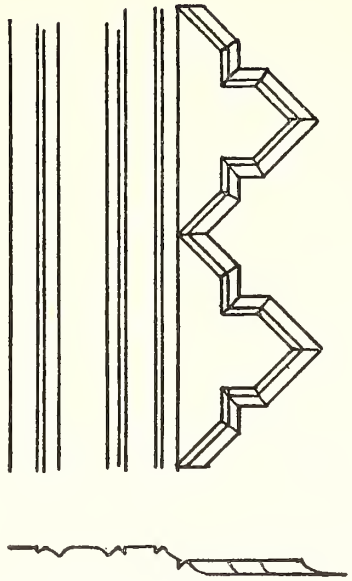


FIG. 30—DAMASCUS, MADRASA AL-ʿĀDILĪYA

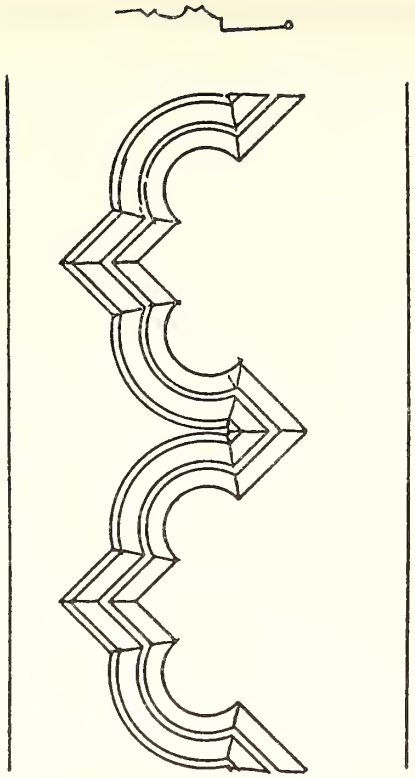


FIG. 31—DAMASCUS, BĀB AL-KHANDAḲ

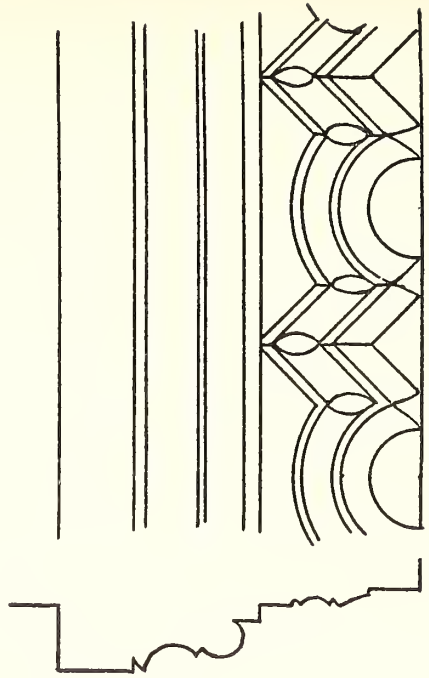


FIG. 32—ALEPPO, MŪRISTĀN AL-ʿATĪḲ, DOOR OF NŪR AL-DĪN

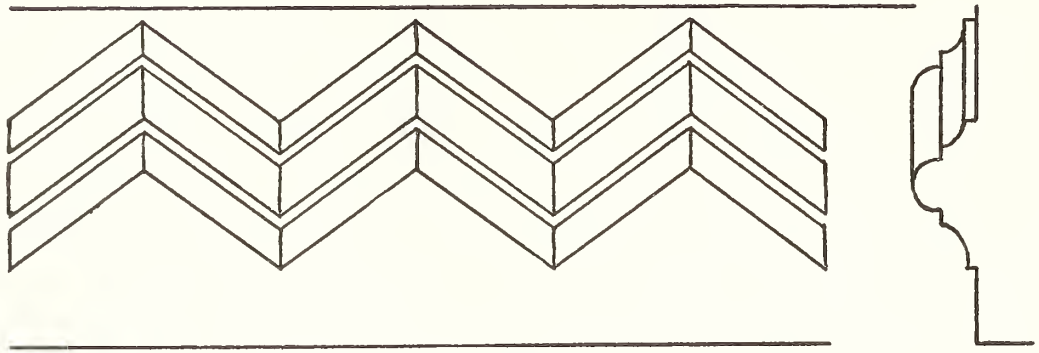


FIG. 33—DAMASCUS, CITADEL, MAIN GATE, LINTEL

FIGS. 30–34—MOLDINGS

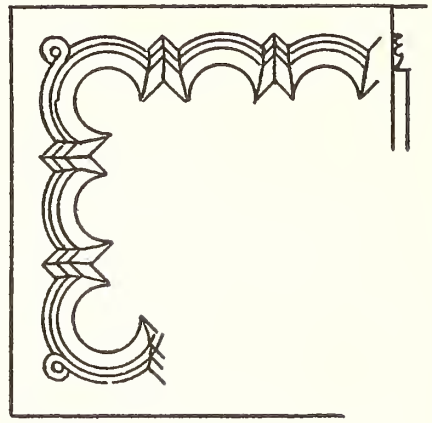


FIG. 34—DAMASCUS, CITADEL, BETWEEN SOUTHEAST TOWER AND SOUTH ENTRANCE TOWER

originally covered by three cross vaults, has now (1930) a flat ceiling, and the mihrabs in it and in the tomb chamber have been concealed.

The façade of the ʿĀdilīya is the classical example of Ayyubid architecture at Damascus. Before following the evolution of the suspended vault a few remarks must be made. A denticulated molding (*Fig. 30*) frames the piers of the bay, the re-entrant sides, and the

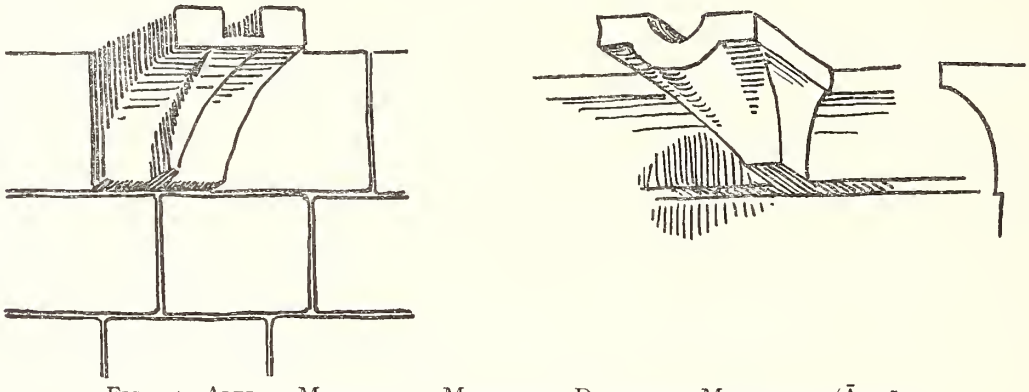


Fig. 35—Aleppo, Mashhad al-Muḥassin; Damascus, Madrasa al-ʿĀdilīya

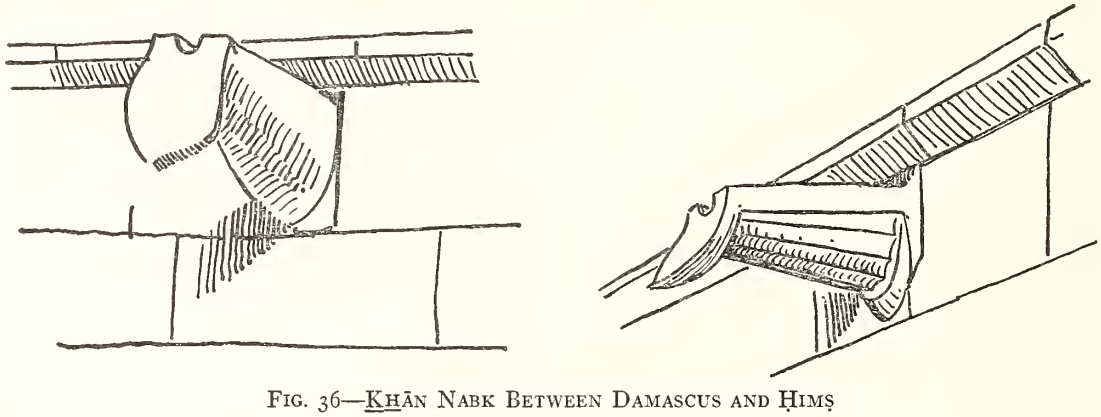


Fig. 36—Khān Nabk Between Damascus and Ḥimṣ

background on which area it circumscribes the door. It is a typical molding of the period; Figures 31–34 give examples from the porch of the Māristān al-ʿAtīḳ, Aleppo, built between 545 and 549; from the Bāb al-Khandaḳ and the citadel gate, Damascus, both works of malik al-ʿĀdil; and from an undated slab built into the citadel wall between the southeastern tower and the main gate, and resembling closely the frame around an inscription of Ẓāhir Ghāzī of 594 H. at Ṣāliḥīn, Aleppo. The oldest example, from the Māristān al-ʿAtīḳ, comes near to the moldings of the minaret of Maʿarra, dating about 565 H.[101]

The original distinction between vertical and horizontal profiles has long since vanished; all moldings are a frame meant to give emphasis to certain parts of the surfaces. Here it has

[101] An illustration of this molding will be found in the next installment of this study.

almost the effect of a rug suspended on the wall. The broad and deep frame in the background, to be compared to the frame around the inscription of Nūr al-Dīn in Hama, does not quite touch the inner edges of the bay, and one wonders why only such an indistinguishable distance was left. The reason becomes evident from the elevation: the diagonals of its upper corners coincide with the line of the diagonals of the outer frame. Both lie in entirely separated planes, and in space the correspondence cannot be perceived. In a drawing in vertical projection it is clear, a sure proof that drawings in vertical projection were made for such buildings.

An example from Samarra (*Fig. 78*) is another evidence for this assertion: the Great Mosque of al-Mutawakkil has round buttresses on the outside of its walls; in the interior, every one of the many colonnades has a comparatively small window, with a lobed arch in its longitudinal axis. As the numbers of the buttresses and of the colonnades are without arithmetical ratio, it happens that some of the windows fall into the re-entrant corner of the buttresses. In those cases the outline of the lobed window penetrates the cylinder of the buttresses. The penetration is geometrically exact, but looks improbable and absurd; however, in vertical projection the windows appear perfectly normal.

At certain intervals, simple gargoyles project from the cavetto cornice of the ʿĀdilīya (*Fig. 35*). In order to prove that even such details belong to the original building, Figure 35 gives another example from Mashhad al-Muḥassin, Aleppo, older than the ʿĀdilīya, and Figure 36 shows two from an Ayyubid caravanserai, Khān Nabk, between Damascus and Ḥimṣ, where the Palmyra road branches off. Yāḳūt [102] mentions the "pleasant village with a famous spring always equally cold" and may have stayed in this very caravanserai, soon after 600. This date of the building is confirmed by three fireplaces there (*Figs. 37* and *38*), which might be the work of captive crusaders. They have a kufulī, a broken arch on brackets: if the brackets are turned 90° the outline is that of the baroque stucco arches of Imām Dūr.

Dār al-Ḥadīth al-Nūrīya [103]

(*Fig. 39*)

Nuʿaimī writes: "Dār al-Ḥadīth al-Nūrīya, founded by Nūr al-Dīn Maḥmūd b. Abī Saʿīd [104] Zengī b. Aḳsonḳor.[105] One reads in Ibn al-Athīr: Nūr al-Dīn founded a Dār al-Ḥadīth and endowed it with many waqfs. He is the first as far as we know to have built schools for that purpose," [106] viz., the teaching of the oral tradition of Muhammad's sayings, many of them apocryphal.

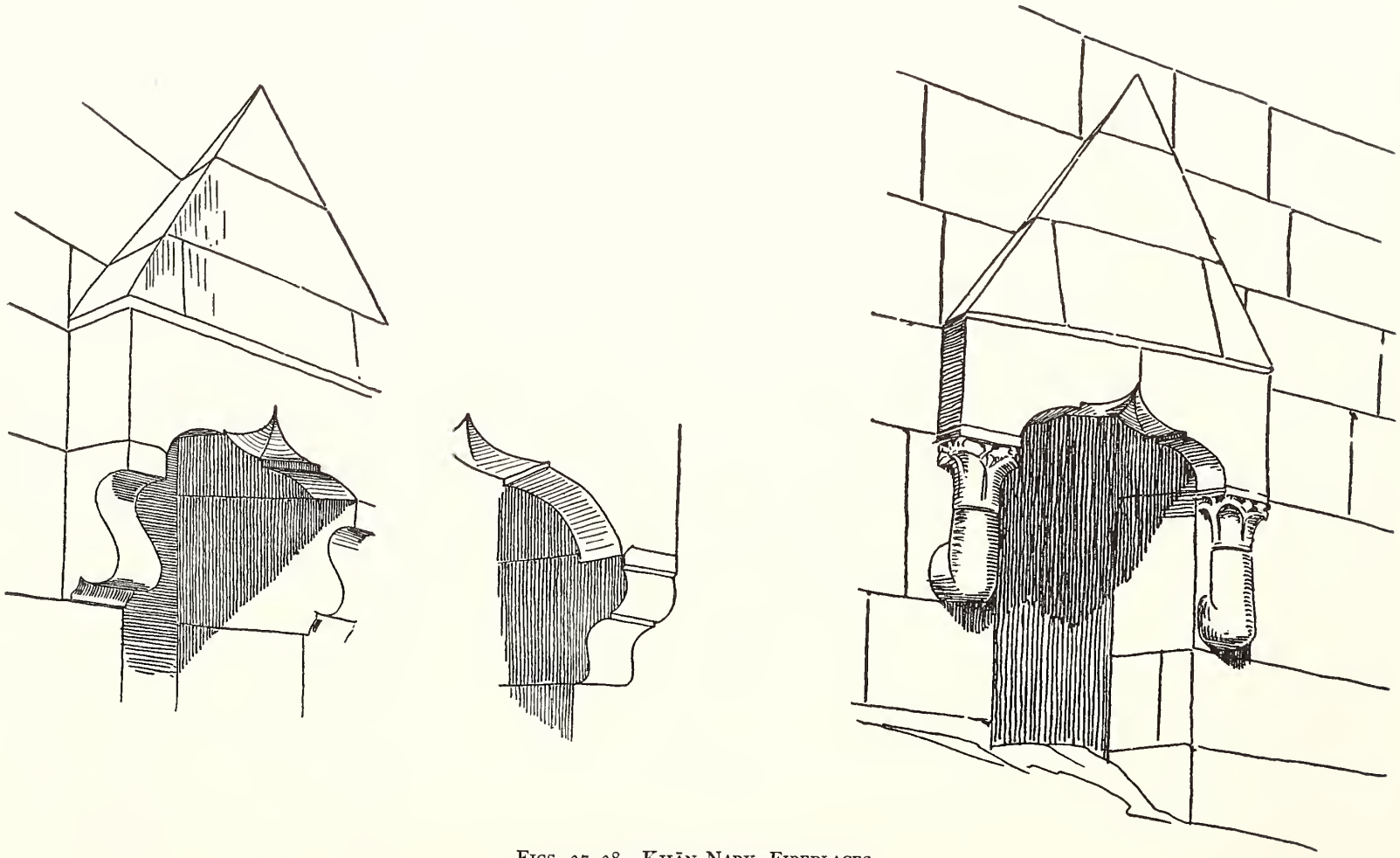
[102] Yāḳūt, *op. cit.*, IV, 739.

[103] Sauvaget, *op. cit.*, n. 20; *idem, Les Monuments ayyoubides de Damas* (Paris, 1938), I, 2.

[104] Zengī's kunya is nowhere mentioned; therefore, Sauvaire doubted Abū Saʿīd, which is, however, confirmed by his inscription in the Great Mosque of Aleppo. On the other hand, "Abu 'l-Djūd" with which Ibn Khallikān opens his biography (*op. cit.*, No. 244) fits the incomplete "Abi 'l- . . . ." of the Baalbek inscription of Zengī.

[105] *JA.*, 1894, pp. 280 f.

[106] "Histoire des Atabecs de Mosul," *Recueil des historiens des croisades, Historiens orientaux* (Paris, 1887), II, Pt. 2, 313. Ibn Khallikān, *op. cit.*, p. 725 (p. 91) also mentions this dār al-ḥadīth, beside the bīmāristān.



FIGS. 37–38—KHĀN NABK, FIREPLACES

'Abdān al-Falakī, owner of the house and bath that stand opposite the Dār al-Ḥadīth al-Nūrīya at Damascus . . . .[107] The Madrasa al-'Ādilīya al-Ṣughrā' is inside the Bāb al-Faradj, east of the east gate of the citadel . . . ., founded by Zahra Khātūn, daughter of malik al-'Ādil Abū Bakr b. Ayyūb. It had been a house belonging to Ibn Mūshik [ancestor of the Ḳaimarī emirs] and stands opposite the Dār al-Ḥadīth al-Nūrīya.[108]

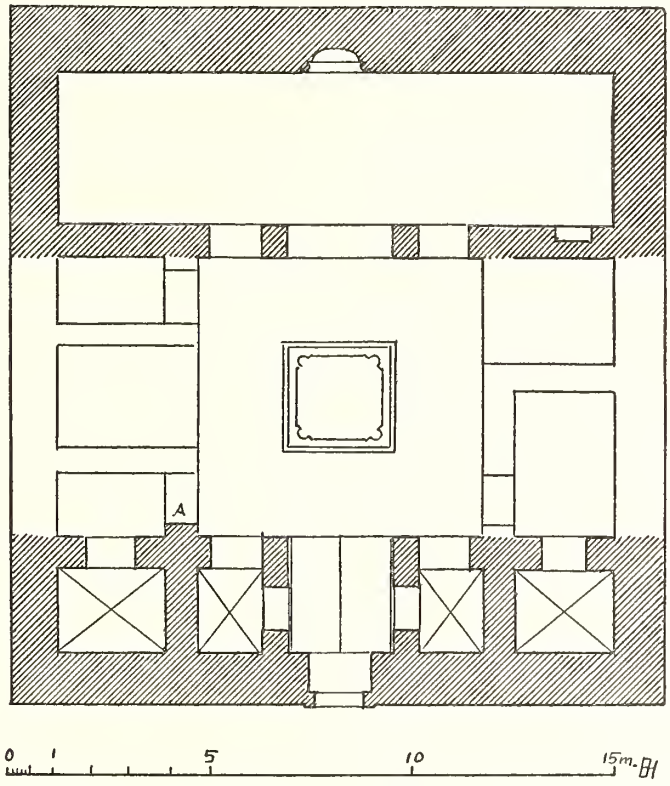


FIG. 39—DAMASCUS, DĀR AL-ḤADĪTH AL-NŪRĪYA

Ibn Djubair writes (in 580 H.): "We alighted at the Dār al-Ḥadīth west of the Great Mosque." [109]

The building is anepigraphic, but its identity is assured, for it actually stands opposite a building epigraphically determined as the "lesser 'Ādilīya." It was reduced to two parts, the connecting wings having already been destroyed by fire at the time of van Berchem's visit in 1893–94.

Originally, it was nearly square, 16.2 by 17.3 m. around a small court 7 m. square, with a tank in its center. Only the north wing on the street and the prayer hall in the south

[107] *JA.*, 1894, p. 306 (n. 84).
[108] Al-Ṣafadī, quoted in *JA.*, 1894, p. 424.
[109] Ibn Djubair, *op. cit.*, p. 262, 1.

remain. The door on the street has a molded frame in good masonry and, above the lintel, a block with an elongated tabula ansata, made to receive an inscription of one or two lines that was never written. The chronicles do not give the date, which is limited between 549, the con-

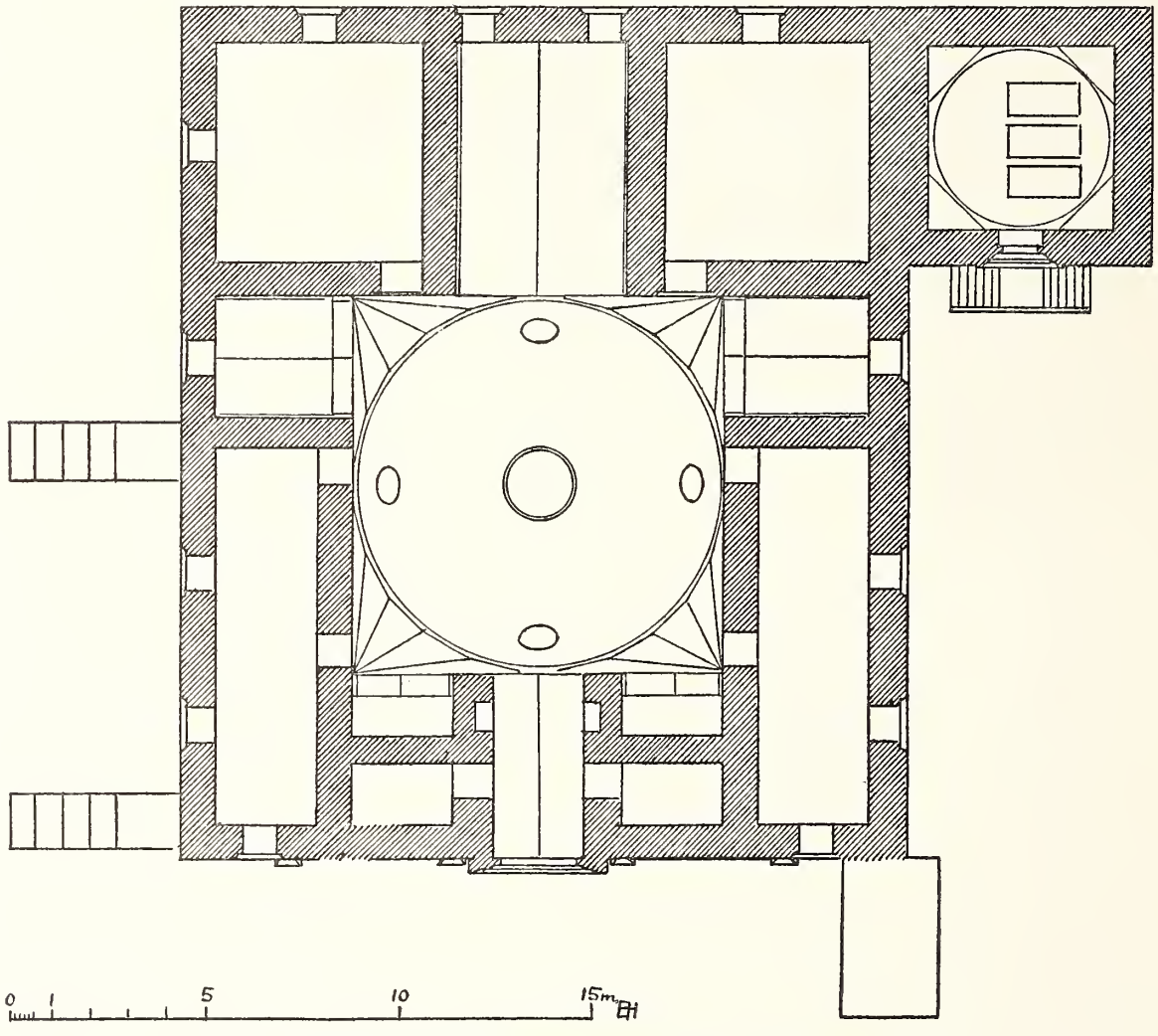


Fig. 40—Ḳaraman, Ḳaramanoghlu Mausoleum and Madrasa, Plan

quest of Damascus, and 569, the death of Nūr al-Dīn. The absence of the inscription puts the building at the end of that period. The first ḥāfiẓ (one who knows the whole Koran by heart) that directed the teaching was Abu 'l-Ḳāsim Ali ibn al-'Asākir, who was born in Muḥarram 499 (September, 1105) and who died in Raḏjab 571 (January, 1176).

As seen from the interior, the entrance is a small īwān flanked by a pair of tiny chambers, both opening into īwān and court. This group of three leads to the form evolved in the

FIG. 41—DAMASCUS, MADRASA NŪRĪYA, COURT

Neg. No. 2816

FIG. 42—DAMASCUS, MŪRISTĀN NŪRĪ, COURT

Neg. No. 2851

FIG. 43—DAMASCUS, MŪRISTĀN NŪRĪ, MAIN ENTRANCE

Neg. No. 2857

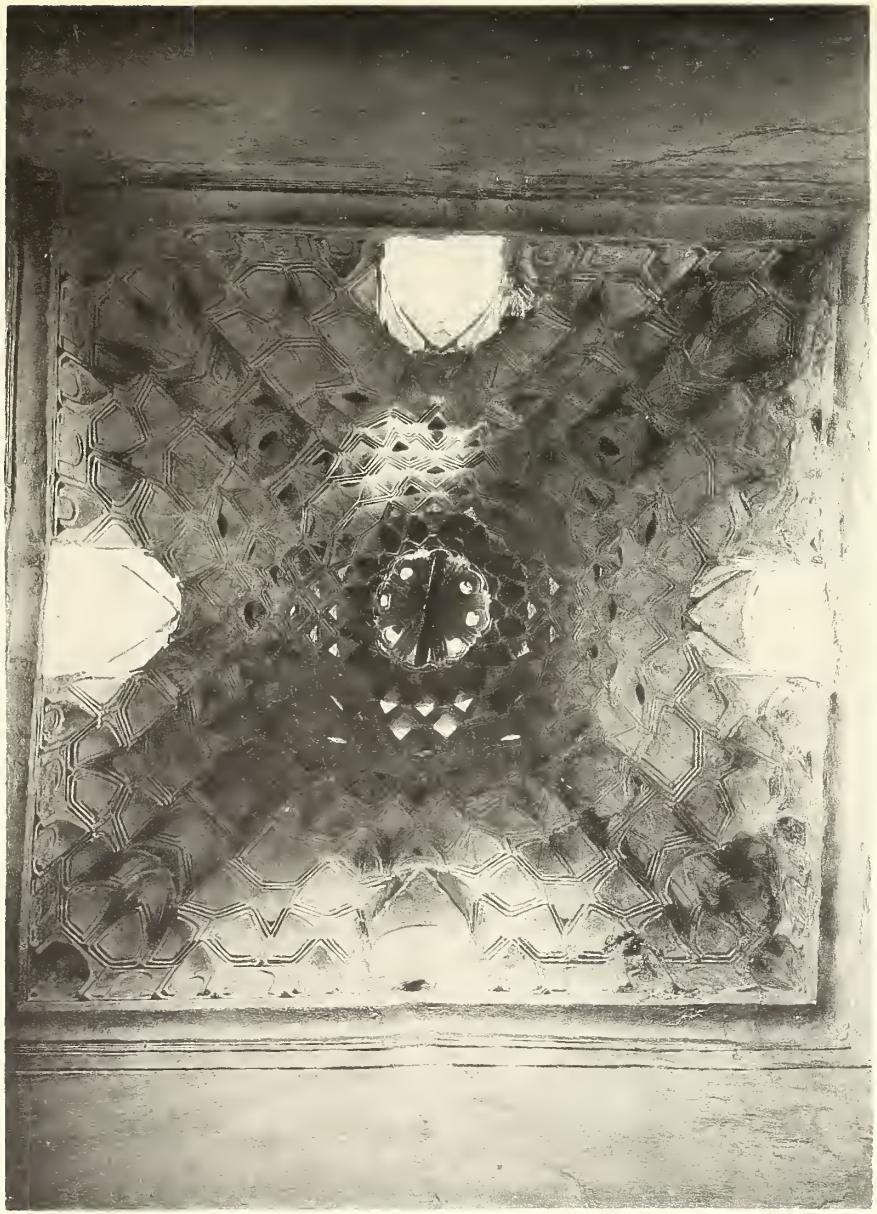


FIG. 44—DAMASCUS, MŪRISTĀN NŪRĪ, DOME Neg. No. 2850

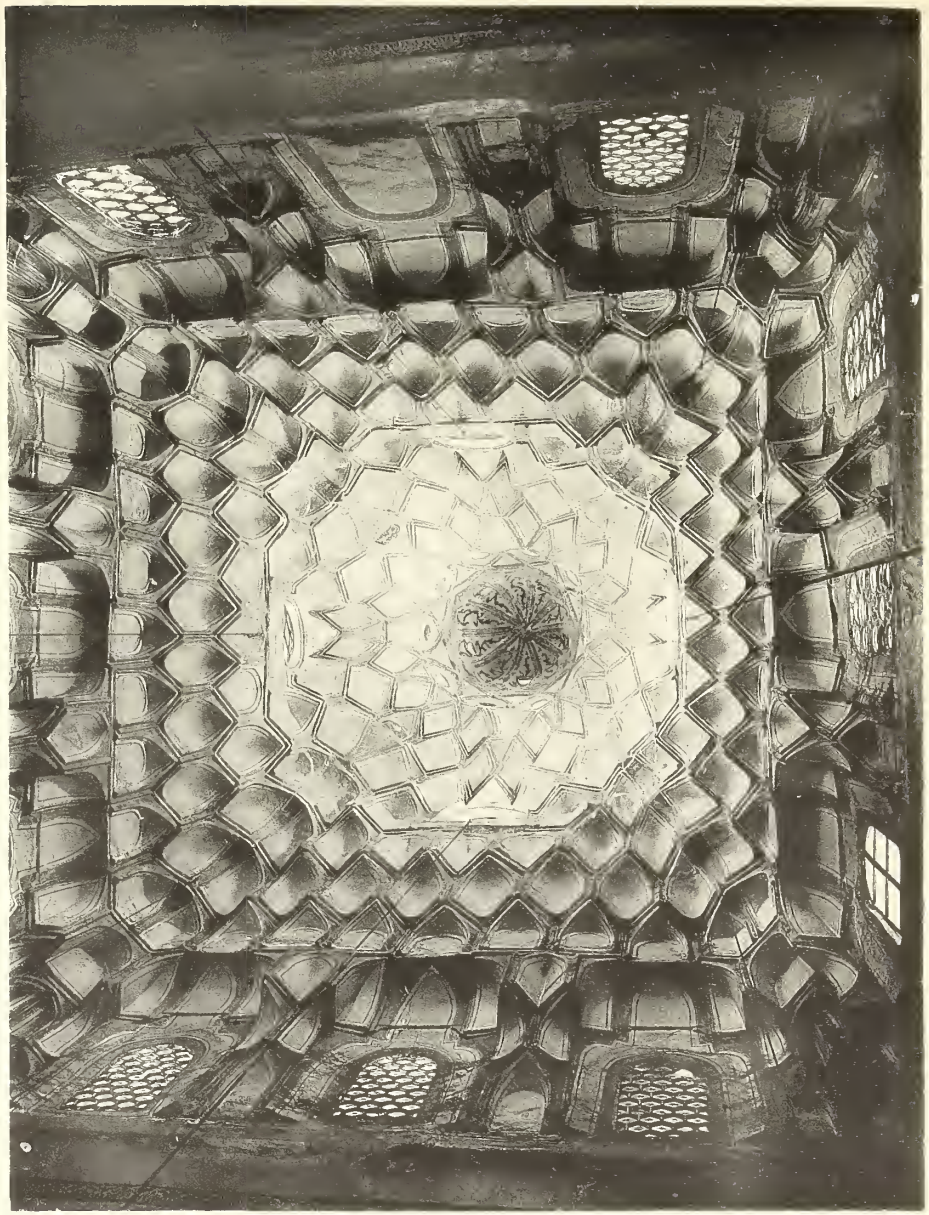


FIG. 45—DAMASCUS, MAUSOLEUM OF NŪR AL-DĪN, DOME Neg. No. 2806

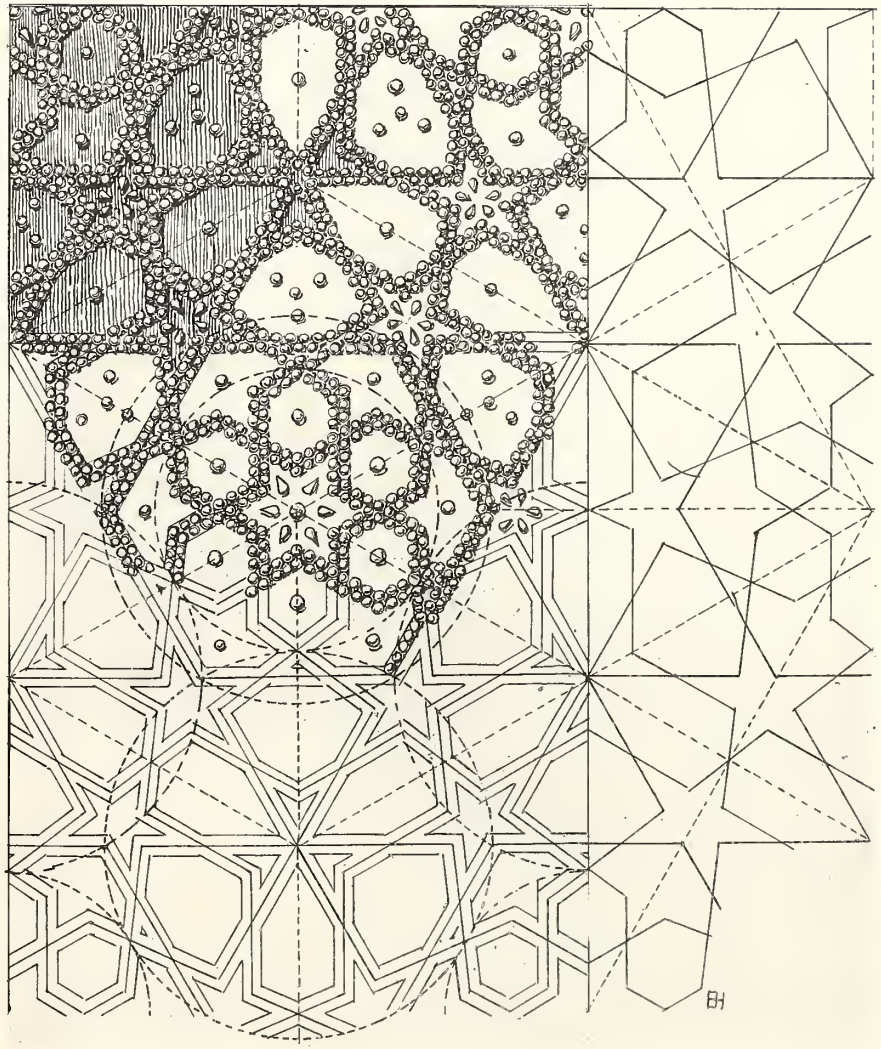


FIG. 46—DAMASCUS, MŪRISTĀN NŪRĪ, DOOR D-224

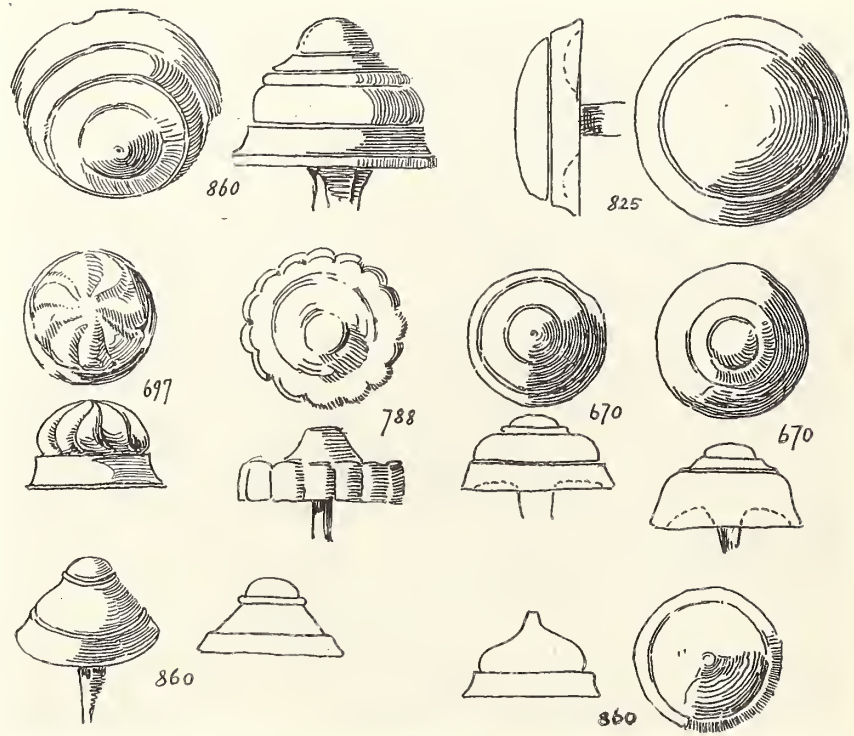


FIG. 47—SAMARRA, NAIL HEADS D-214

FIG. 48—DAMASCUS, MŪRISTĀN NŪRĪ

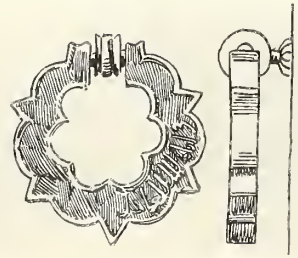


FIG. 49—ALEPPO, MADRASA AL-SHĀDHBAKHTĪYA

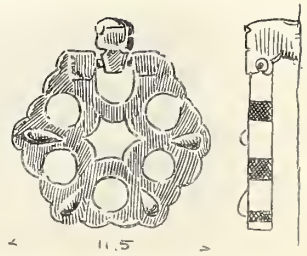


FIG. 50—MOSUL, 'AWN AL-DĪN

FIGS. 48–50—DOOR KNOCKERS D-215

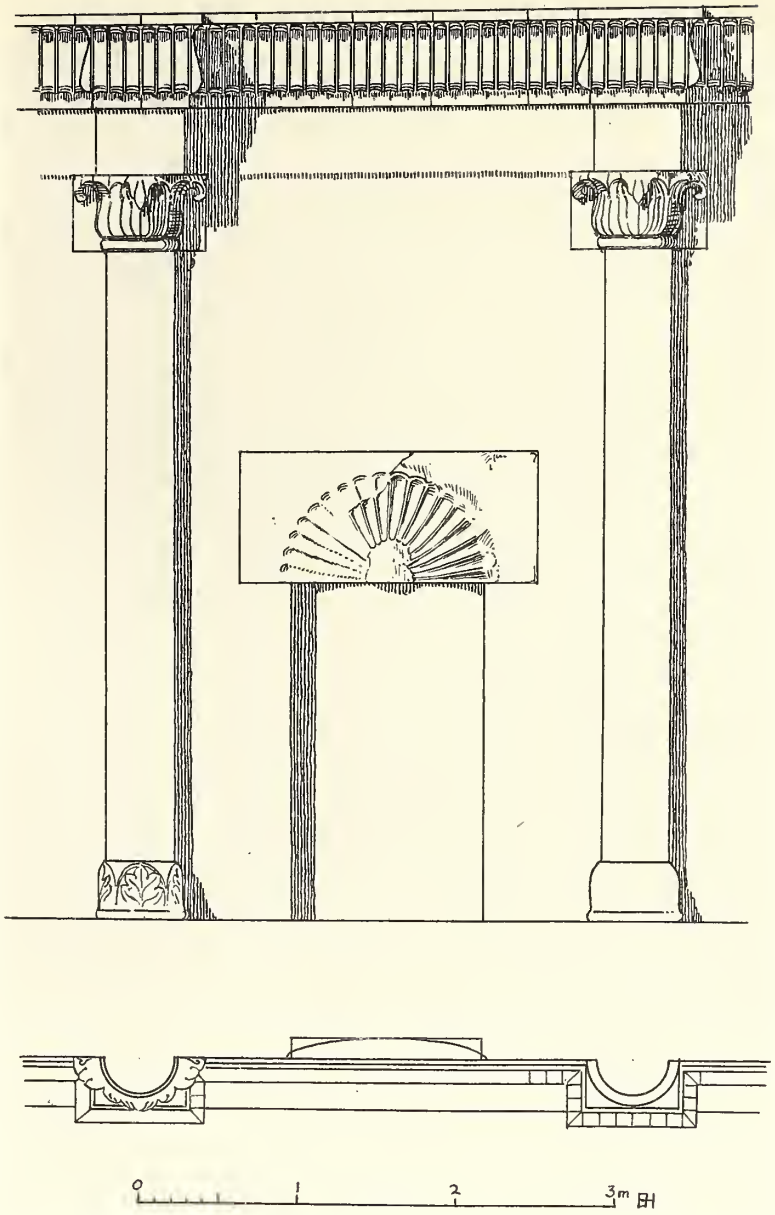


FIG. 51—ISTAKHR, HELLENISTIC FAÇADE (RECONSTRUCTION) D-731

FIG. 52—ROCK-HEWN MIHRAB, ABOVE ALLAHU AKBAR PASS D-216

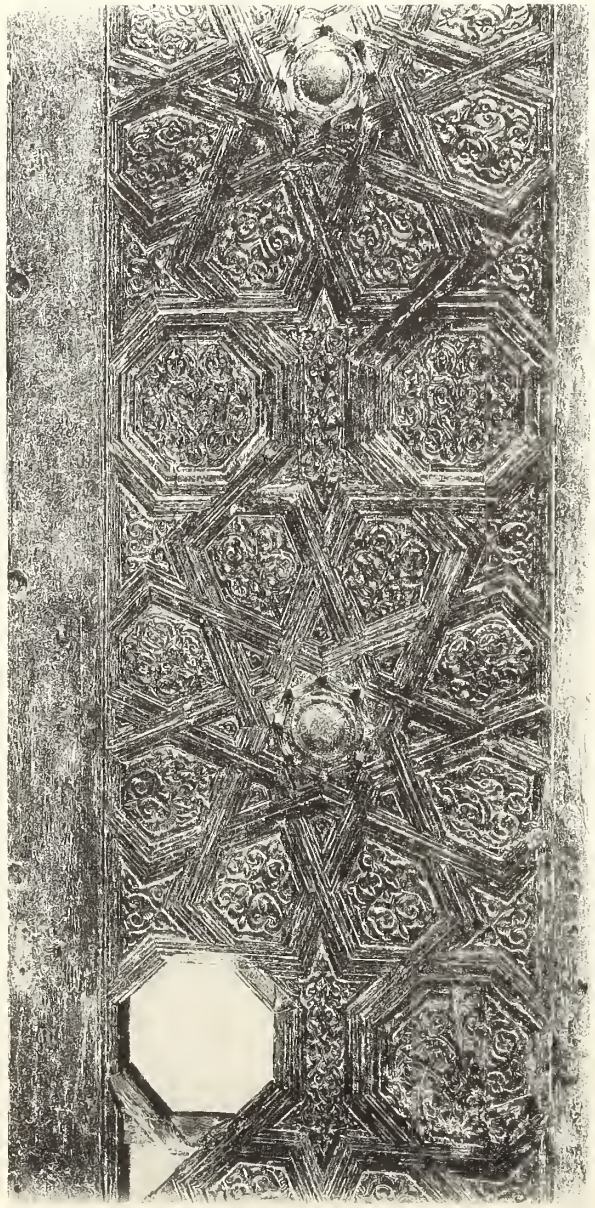


FIG. 53—ALEPPO, CITADEL, MIHRAB OF NŪR AL-DĪN IN THE MAḲĀM IBRĀHĪM Neg. No. 3298

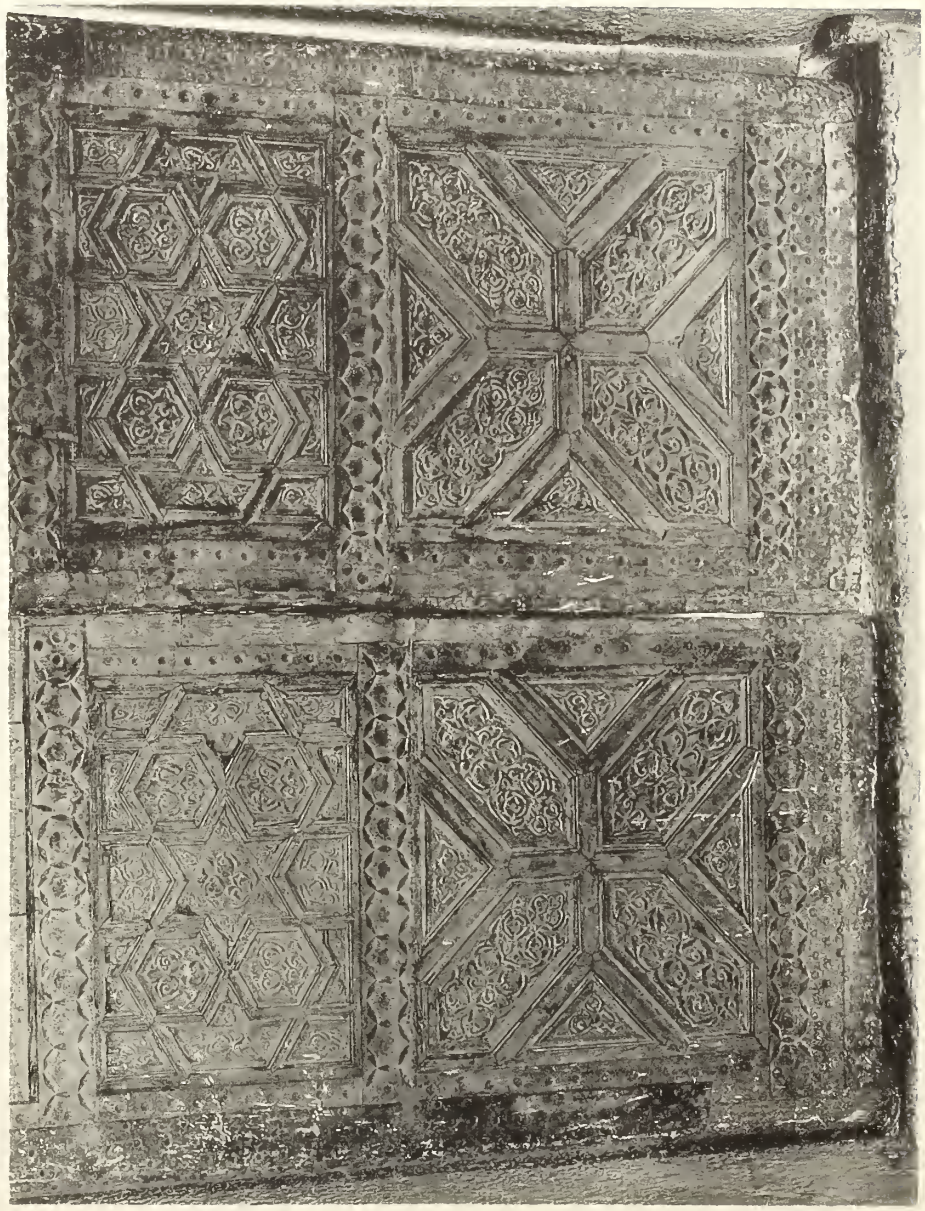


FIG. 54—DAMASCUS, MŪRISTĀN NŪRĪ, DOOR Neg. No. 2849

FIGS. 55–56—DAMASCUS, MŪRISTĀN NŪRĪ, DETAILS FROM MIHRAB

Fig. 57—Imām Dūr, Inside of Dome

Neg. No. 1734

FIGS. 58–59—BAGHDAD, PALACE IN THE ḲAL'A. CARVED TERRACOTTA MUḲARNAS

Neg. No. 2694

FIG. 60—DAMASCUS, MAUSOLEUM OF NŪR AL-DĪN Neg. No. 2854

FIG. 61—DHU'L-KIFL, TOMB OF EZEKIEL

FIG. 62—IMĀM DŪR, TOMB OF MUSLIM IBN ḲURAISH

FIG. 63—BAGHDAD, TOMB OF SITT ZUBAIDA

FIG. 64—ISLAND OF KHĀRG, IMĀMZĀDE MĪR MUHAMMAD Neg. No. 2660

FIG. 65—BAGHDAD, TOMB OF SUHRĀWARDĪ

FIG. 66—ISLAND OF KHĀRG, ENTRANCE TO IMĀMZĀDE MĪR MUHAMMAD Neg. No. 2659

FIG. 67—BĀBĀ MUNĪR, MAUSOLEUM OF A SUFI D-217

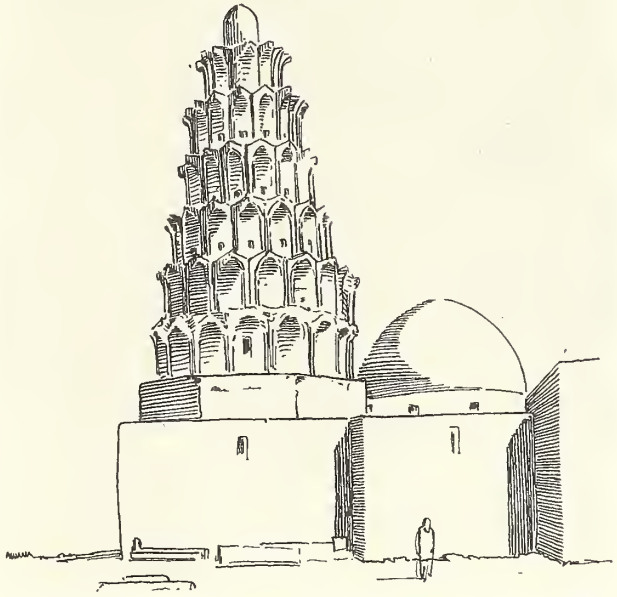


FIG. 68—ZUBAIR, OLD BASRA, TOMB OF HASAN AL-BAṢRĪ D-218

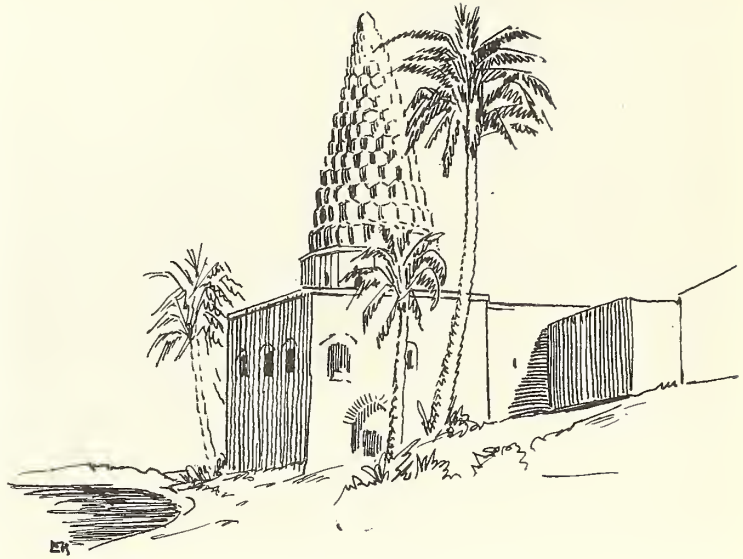


FIG. 69—SUSA, TOMB OF DANIEL D-219

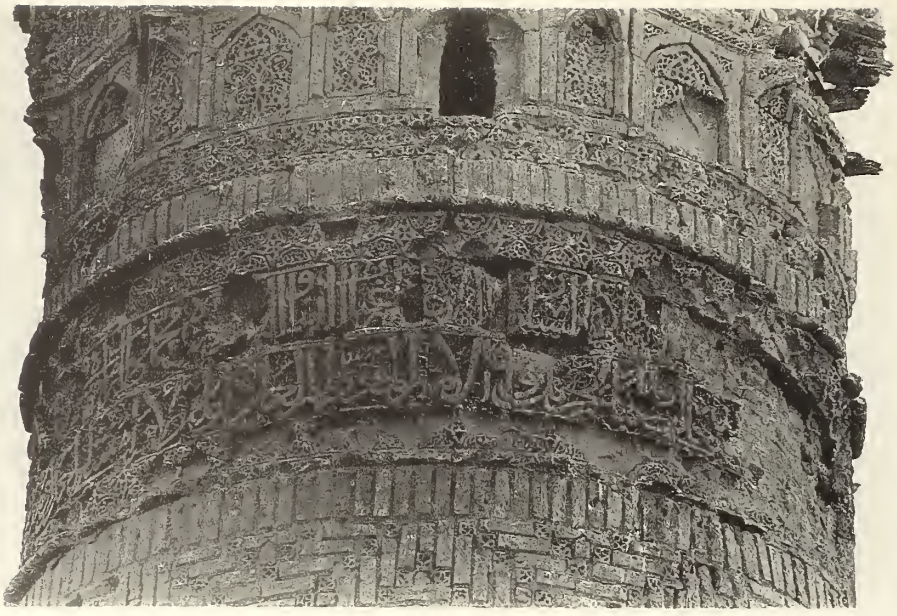


FIG. 70 Neg. Nos. 2705-06

FIG. 71 Neg. No. 2704

FIG. 72 Neg. No. 2710

FIGS. 70–72—DHU'L-KIFL, MINARET OF OLDJAITU AND ABŪ SA'ĪD

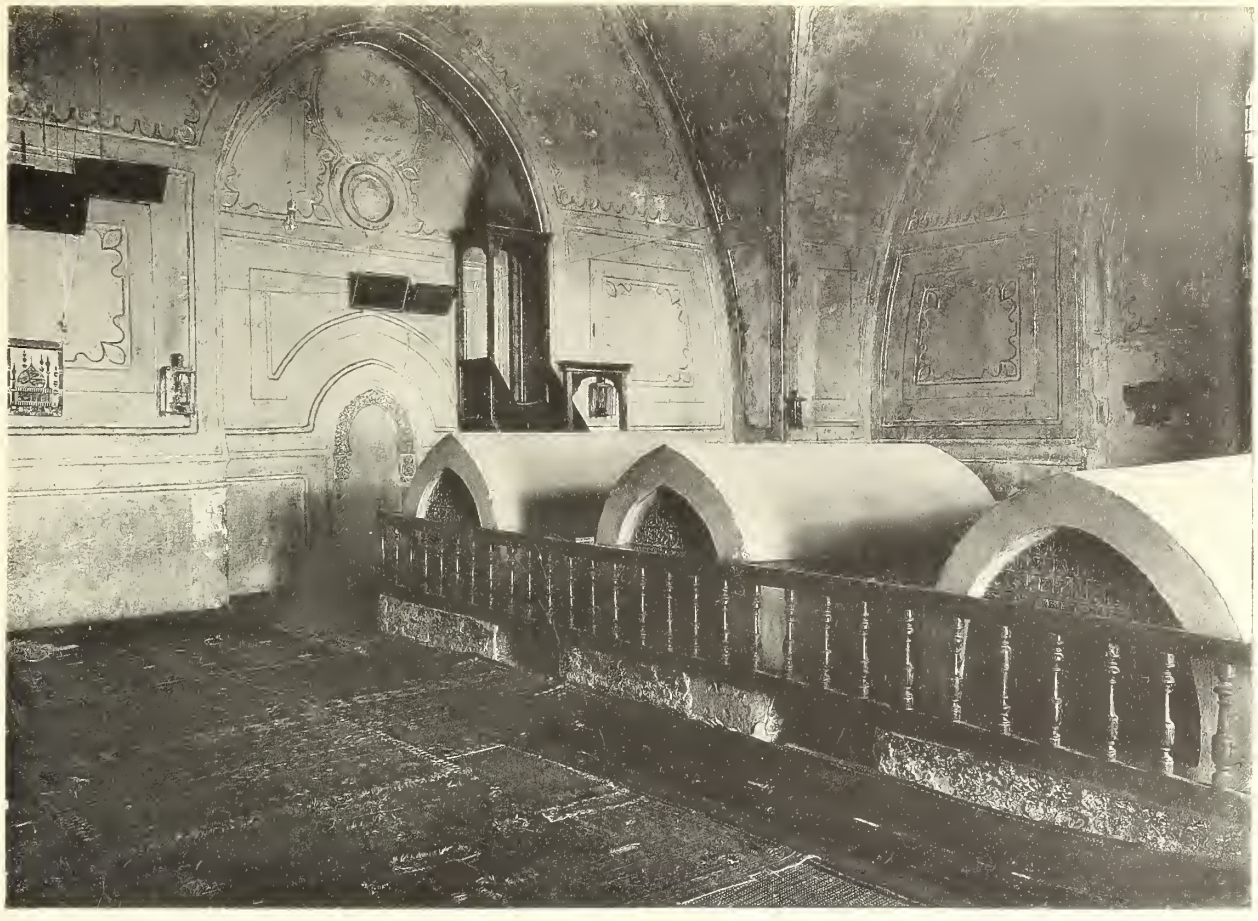


FIG. 73—DAMASCUS, SHĀMĪYA, TOMBS Neg. No. 2760

FIG. 74—DAMASCUS, TOMB OF NŪR AL-DĪN Neg. No. 2830

FIG. 75 D-130

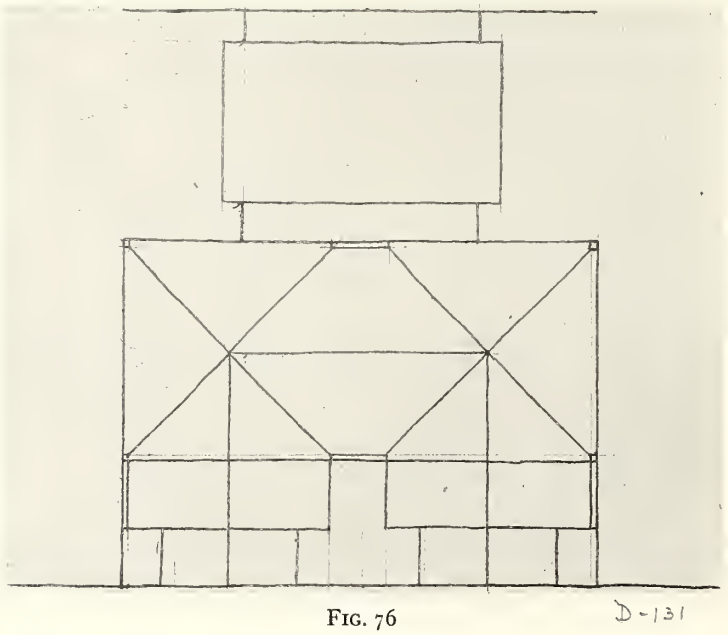


FIG. 76 D-131

FIGS. 75–76—DAMASCUS, MADRASA AL-NŪRĪYA, ENTRANCE, FRONTAL VIEW AND PLAN

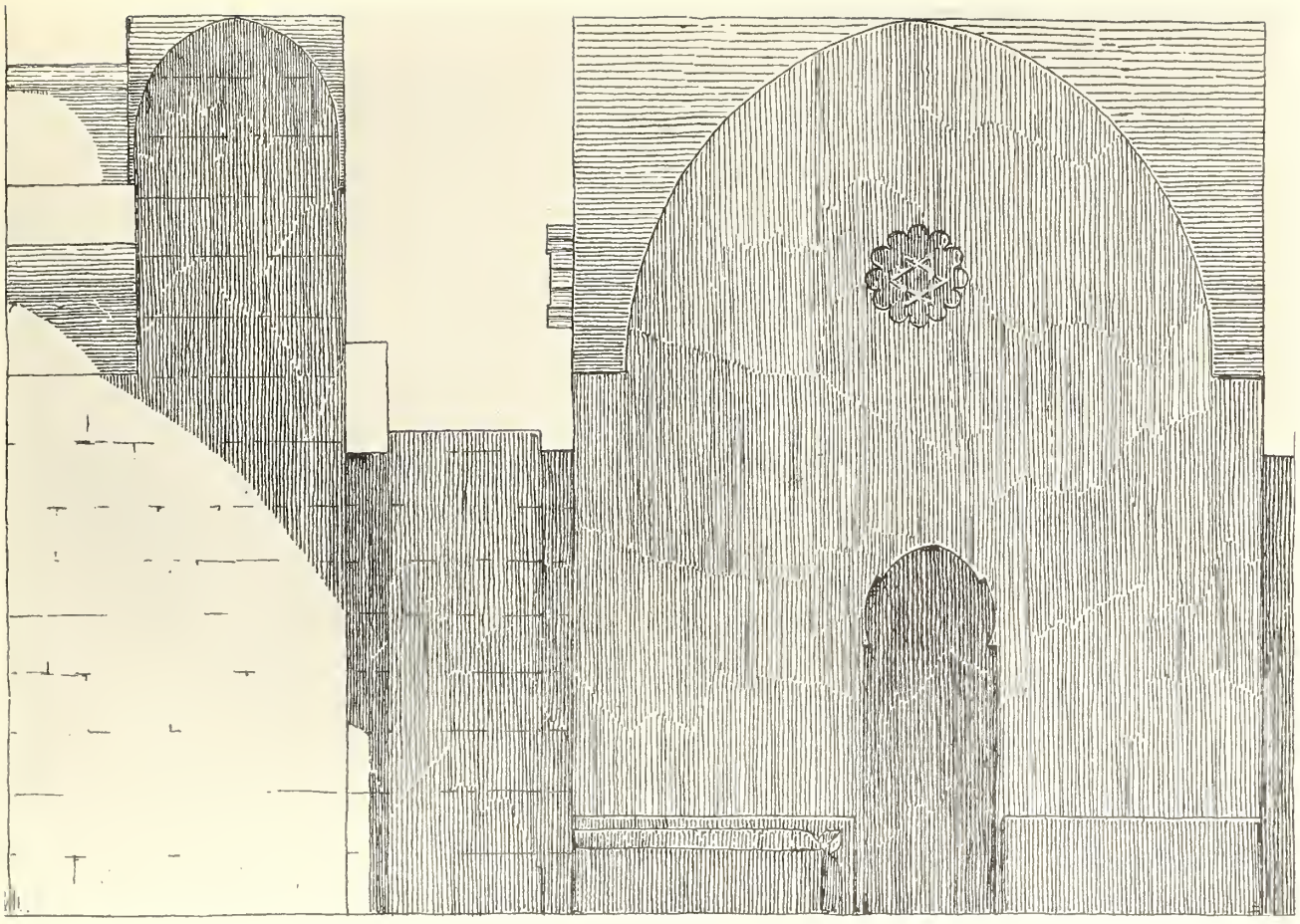


FIG. 77—DAMASCUS, MADRASA AL-NŪRĪYA, ENTRANCE, CROSS SECTION

D-132

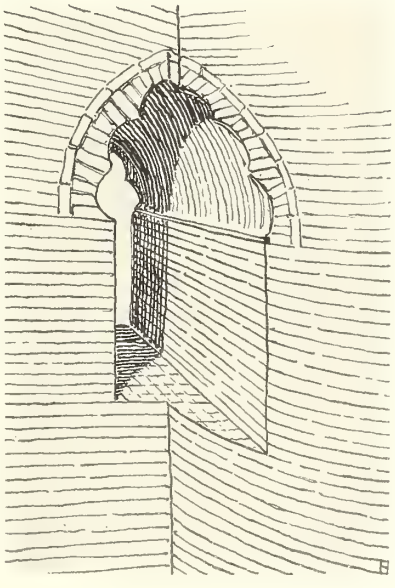


FIG. 78—SAMARRA, GREAT MOSQUE OF AL-MUTAWAKKIL, WINDOW IN BUTTRESS

Madrasa al-Ṣāḥibīya,[110] or the Ẓāhirīya, Aleppo: the entrance between a pair of shallow īwāns. At the corners are two closed chambers whose doors lead into the destroyed side naves of the building.

Mainly because a pilaster, *A* on the plan, is preserved at the northeast corner of the court, Sauvaget restores the missing parts as replicas of the prayer hall, which occupies the entire breadth of the south wing, thus arriving at identical elevations for the four sides of the court. The argument can be turned both ways: the preservation of one pilaster permits restoration of the three others; or, the preservation of only one indicates that there never were four. My plan offers two different solutions which I prefer for various reasons: I cannot see how to classify Sauvaget's plan. A dār al-ḥadīth is a small madrasa; pupils and teachers live in it. In this one, it is known that they received guests like Ibn Djubair. It is not enough to say, Orientals need nothing but a bedroll to spread somewhere. The small living rooms are what makes a plan a madrasa; the open īwāns are equally essential. In Sauvaget's plan there are only two such chambers—those that are preserved—and no īwān, whereas there is an unwarranted number of common rooms.

Furthermore, symmetry may be assumed for such a small building, but only in relation to one axis, north-south, not to two axes. Most of the Syrian madrasas, all much larger, are not strictly symmetrical. There the function dominates the plans: never is a necessary part left out, nor is an existing part superfluous. The parts are arranged in a balanced correspondence, the main ones (prayer hall, īwān) indicating the axes, but not in symmetrical repetition. That is Iranian and does not appear in Syria before the third and last phase of the Ayyubid period, 634–58.[111] It is achieved by the addition of something inessential, and repeating the prayer hall on both sides of the court in the Dār al-Ḥadīth would be just that.

The solution proposed on the left of my plan follows the idea formulated in the Māristān of Nūr al-Dīn; the solution on the right anticipates the plan of the Ṣāḥibīya and other madrasas. All of them are variations of a common theme. Figure 40 shows the plan of the *Ḳaramanoghlu Mausoleum and Madrasa at Ḳaraman,* surveyed with F. Sarre in 1907. My old notes say nothing about inscriptions; we were told, the three tombs were those of an Ibrāhīm and his sons Meḥmet and Khalīl. Lane ignores the Ḳaramanoghlular; von Zambaur gives affiliation and dates that are irreconcilable. So the date remains open; I assume "end of the seventh century" because the building resembles closely the madrasas of Konia, Ḳaraṭay, dated 649 H., and Indje Minareli, from the end of the seventh century. As in these buildings, the climate of Asia Minor necessitates covering the interior court with a wide spanned dome. But it remains the court. The two lateral īwāns are pushed into the corners of that court like the two alae of a western atrium, perhaps an indication of the intrusion of Mediterranean customs.

[110] An illustration of the entrance to the Madrasa al-Ṣāḥibīya will be found in the next installment.

[111] Typical examples: Aleppo, Firdaws, 634 H.; Ṣāliḥīya, Ṣāḥiba, after 630. Ḳaimarīya, 646–56.

MATERIAL FOR A HISTORY OF ISLAMIC TEXTILES UP TO THE MONGOL CONQUEST*

BY R. B. SERJEANT

INTRODUCTION

PREVIOUS TO 1914, VON KREMER, MEZ, KARABACEK, AND OTHER DISTINGUISHED GERMAN orientalists had discovered notes on the textiles of early Islam in those texts available at the time and had published them in rather a casual and unsystematic manner; but the far wider range, ever increasing, of texts available in good editions today contains raw materials for research virtually inaccessible to these earlier authorities. In particular one might mention the three manuals of police regulations for petty trading, manufacture, and the maintenance of public morality (Ḥisba), published within the last five years. They display an interest in the social and economic life of the people rare in oriental authors and describe manufacturing processes which literary men ignore.

Much of the material collected by me on Persia has already been set forth in Gaston Wiet's excellent essay, "Une Liste alphabétique des localités de la Perse célèbres comme centres de tissage" in his *L'Exposition persane de 1931*. Though most useful and easy to consult, there were several criticisms that one might make of this method of treatment. The list naturally gives no indication of the groups of cities manufacturing similar types of materials; being a list only, though a very good one, it could not show the interdependence of the manufacturing groups of Persia, Iraq, Egypt, North Africa, Yemen, or Spain, for Persia was treated as a single isolated unit. Nor did the scope of the "Liste" extend to the examination of chronology, the correction of faulty and misleading texts or translations, nor the serious comparison and collation of sources. Nearly all M. Wiet's sources are geographical.

Another excellent article, published by A. Grohmann in the *Encyclopaedia of Islām* and its *Supplement*, under the heading "Ṭirāz," contains some of the material on Egypt embodied in this book. The scope of this succinct little article is limited by its very nature, though an astonishing variety of sources has been consulted. In addition to the articles mentioned above, many monographs are to be found scattered throughout the archaeological and art journals which describe finds of Muslim textiles. On the completion of this book that part of the *Survey of Persian Art* containing Phyllis Ackerman's[1] article on Persian textiles had not yet appeared, but most of the sources she mentioned in a footnote, though not all, are listed below.

* When it was suggested that I might examine Arabic and Persian literature for historical notes and comments on medieval Islamic art, I had intended to collect and collate all information relating to the so-called minor arts. In the process of reading many classical texts I discovered, however, that nearly half of the material related to textiles. Other materials mainly concerned the mining of metals, the discovery and working of precious stones, on which a number of treatises have been written; there were notes on pottery, leather, arms and armor, reed mats, on wooden utensils such as bowls and combs, on paneling and mimbars, tortoise shell, ivory, and on asbestos. Eventually, I was obliged to confine my research to textiles, and, moreover, to work within the early period of Islam before the Mongol cataclysm. When time and opportunity allow, I hope to publish an article on Muslim pottery and glass planned on similar lines.

[1] "Textiles of the Islamic Periods. A. History" (London and New York, 1938–39), III, 1995–2162, Figs. 644–721, VI, Pls. 981–1106.

During the retyping, I was enabled to consult C. J. Lamm's *Cotton in Mediaeval Textiles.*[2] This very recent publication had not previously been available to me, and there I found more scattered notes with no attempt at a critical examination. A great deal of his material had already been incorporated in my book.

Although some of my material was translated and published during the course of my research itself, a great deal of new information is contained here; the chapters relating to Spain, the Maghreb, Armenia, Transoxiana, and Yemen, besides those on dyers and technical methods, are almost wholly new. Even with regard to the parts of Persia and Egypt already documented by others, I have sometimes been fortunate in obtaining earlier materials of some significance. Critical examination of the texts, too, may have afforded some results.

THE ORIENTAL SOURCES

A few years ago Hasan Muhammad al-Hawary[3] summarized the position of studies in Islamic textiles thus: "L 'étude des tissus islamiques est encore à faire. Cela est dû aux raisons suivantes: *a*). Les auteurs arabes traitèrent peu des industries et des arts, se bornant a décrire les batailles et les révolutions intérieures. *b*). Les tissus datant dès premiers siècles de l'hégire étaient jusqu' à une époque toute récente, très peu nombreux." The position is now greatly changed, and Islamic textiles have become more and more plentiful, though his first assertion holds only too true.

Any references to the great, growing, and ever changing industry of cloth manufactures of the early period are scarce; even during the great *"Blütezeit"* of the caliphate under the Abbasid dynasty the Arab authors make but casual and occasional remarks on the arts. The *Fihrist* does contain the names of books on art, even painting, but these have not been preserved, and, even had they survived they would doubtless all too often be found to consist merely of a series of witticisms vaguely connected with pictures. Consequently, to glean any material whatsoever it is necessary to read a very great many works containing little relevant information, sometimes none. The geographers are, of course, the most accessible and promising hunting ground for scraps and items of interest for reconstructing a social history of Islamic civilization; but even these often curtly dismiss the industries of some great city or are silent concerning them, while treating at length of some unimportant village. Their uncritical attitude to the extracts which they plagiarize without acknowledgment from earlier sources, transferring a section of the text with no regard to the altered conditions of their own times, often deprives what little they have to say of much value.

Historians allude to various textiles by name, but these are few and far between, not at all easy to find in the mass of battle and intrigue. Other incidental notes must be sought in the Adab or polite literature, where elegance in costume and the decrees of the arbiters of taste and fashion are set forth for those aspiring to follow the mode. The manuals of Ḥisba have been spoken of above. Almost anywhere else in the immense field of Arabic and Persian

[2] Paris, 1937. This book was placed at my disposal through the kindness of Professor Wace, Cambridge.

[3] "Un Tissu abbaside de Perse," *Bull. Instit. d'Égypte,* XVI (1934), 61.

literature the searcher may chance upon observations scattered here and there. Few Persian authors have been consulted in comparison to those who wrote in Arabic.

Up to the present the editing of Arabic literature has, in the main, been concerned with the production of a text, as correct as possible, independent of collation with parallel passages in other authors. Consequently, surprising discrepancies are evident in writers who claim to quote the same passage.[4]

MISCELLANEOUS SOURCES

Through lack of time and knowledge I have not been able to utilize the contemporary sources of the earlier period in Europe, but after the thirteenth and fourteenth centuries there is a great wealth of allusion in the works of European travelers to oriental manufactures, which they regarded with some respect. Originally, I had intended to include notes from European accounts of travel in the East, but as most fall outside the period which I finally resolved to cover, 600 A.D. to 1300 A.D., I have for the most part limited myself to oriental sources, while, where it seems relevant, including European authors already examined. Another entire source book could be composed from European accounts of the East alone. A few Chinese and Hebrew authors in translation have been consulted, and there may be some Sanskrit works in translation which might give the names of Islamic textiles or accounts of Islamic cities, but I have not encountered these if they exist.

The history, of course, cannot be complete until every possible source has been examined, but those texts available and most likely to be fruitful of information have been ransacked for any allusions they may contain. To peruse the whole of such immense works as the histories of Ṭabarī and Ibn al-Athīr is manifestly impossible but, without reading from cover to cover, notes have been added from both.[5]

IDENTIFICATION OF TEXTILES

Little attempt has been made to identify the stuffs discussed by the authors with those discovered by archaeologists. To do so would be premature, while the study of Islamic textiles is still in its infancy. It is possible that textiles may be found with their type name inscribed on them, as for instance, a barrakān; the Kaaba coverings always had their title, Kiswa, contained in the inscription. Because so many oriental names for types of fabrics are dubious and ambiguous, most (perhaps too many) have been given in transliteration, which is really the only means of consistent identification.

[4] The comparison of recently published texts with older ones has frequently led me to make emendations or suggestions, superficially rather arbitrary, on the ground that a parallel text has a reading with a more suitable sense.

[5] A few references which came to my notice too late to be inserted in the text find their place in the footnotes. The poet of clothes, Maḥmūd Ḳārī of Yezd, was consulted by me too late to be quoted in this study, but his work contains some names of textiles from towns not mentioned herein; for instance, it mentions Antioch stuffs. If conditions permit my consulting this *Divan,* I may be able to place a list of his stuffs in the "Addenda."

ARRANGEMENT

The mass of material embodied in this history tends to obscure the main trends of cultural movements. In a source book such as this is, prolixity is almost unavoidable. The work has been arranged in a kind of geographical sequence, dealing with the countries in the east and then moving to the western provinces. Ṭirāz and its origins, definition, and history have been dealt with in the first two chapters. The manufactures of Iraq naturally fall into place after those of Baghdad. Each chapter is arranged chronologically, though ṭirāz cities have generally been dealt with at the beginnings of the chapters.

I have given the question of maps much serious thought.[6] Our knowledge of early Muslim geography, more particularly in Egypt, is still rather vague.[7]

The terms "Muslim" and "Islamic" as used here connote a cultural area and not a religious division. The Arab eruption overflowed into the former territories of the Byzantine and Persian empires. It brought the Far East, China and India, into closer contact with the Middle East than it had ever been before, while, in time, the syncretistic Islamic culture spread southward into Africa. The two main ingredients which went to form the eclectic civilization of Islam were the legacies left by Byzantium and the Sasanians. No study of the Arab era which does not examine the state of the people anterior to Islam can be complete, for before the birth of Muhammad great changes had been taking place both in Byzantium and Iran, two strong powers only momentarily physically exhausted from their long struggle with each other. Their cultural influence continued unhindered to mingle in the four hundred years of the Baghdad caliphate. The Umayyad kingdom of Syria must have been a strong patron of Byzantine craftsmen, but even in Baghdad one reads of skilled Roman technicians, usually architects or those learned in the practical application of mechanics.

In the ancient Hellenistic world of Egypt, Syria, and northern Iraq (which recent discoveries have shown to be very strongly under Roman influence), the character of the arts greatly altered in the two or three centuries before Islam. The debased naturalism of late Hellenistic art had been giving way to an abstract and decorative tendency in every sphere, while yet preserving many of the ancient motifs and designs. Coptic art in particular seems to have drawn much of its inspiration from truly eastern sources—from Persia which conquered and held Egypt for some time—and perhaps from the peasant art of the country itself. The extensive and mighty Persian empire, though still continuing to derive cultural elements from Byzantium, had been subtly altering the very nature of its Hellenistic legacy ever since the nationalist Sasanian dynasty had come to power. The silver dishes and the rock reliefs of

[6] Each "centre de tissage" will be shown if the site can be ascertained.

[7] For Persia and Iraq Le Strange's *Lands of the Eastern Caliphate* is ample, and for Syria, his *Palestine Under the Moslems* contains quite an adequate map. The Maghreb, Spain, and Egypt present more difficulty, but Lévi-Provencal's *Le Peninsule ibérique* has a good sketch map of Muslim Andalus. Maps of North Africa are difficult to obtain, and I used Wüstenfeld's map in *Geschichte der Fatimiden Chalifen,* Cook's *Handbook of Algeria and Tunis,* and the map supplied with the new edition of the *Aghānī* (in Arabic). The only good maps of Egypt are in Youssouf Kamal's series of maps, also in Arabic, of medieval Egypt; they are really very detailed, but, unfortunately, to date only the Delta is completed. Butler's *Arab Conquest* contains a very poor map.

Ṭāḳ-i Bustān and other places, the few relics of a perished culture extending from Central Asia to Asia Minor, display the feeling toward abstract design and multiplication of pattern which was to be adopted by Islam. The movement away from naturalism had commenced quite early, witness the city of Palmyra, the paintings of Dura, and doubtless many another Syrian city. Byzantium was itself half an eastern city, depending largely for its resources of vigorous and energetic manpower on the eastern parts of the empire, Cappadocia and Armenia. In Byzantium, too, the revolt against naturalism, obscurely mingled with religious movements, attained its peak in the reign of Leo the Iconoclast, when the representation of holy personages was forbidden and existing representations were destroyed. The new representational art which emerged is completely foreign in spirit.

In no way did the Arabs affect a process that had started before they appeared on the scene; they had no art of their own to oppose to that of the older peoples. They adopted the manufacturing systems in being under previous rulers; they were so ignorant of all the ways of civilization that perforce, they were led to adopt the fiscal, administrative, and legislative systems already existing; during the Umayyad dynasty they introduced few if any innovations, because they had no experience to enable them to do so. Muslim Hadith embodies many of the principles of Roman law, and, although by the time it was formed into a corpus it had a Muslim framework and cast of thought, borrowing from what already existed, it only half realized what had happened. With regard to textiles, however, all that I am concerned to show is that state factories of stuffs of all kinds, previously under Persian and Byzantine monarchs, were automatically adopted by the Arabs into the administrative system and patronage of the Muslim rulers. The whole of the first chapter has been occupied in tracing the origin of this system and its progress in Umayyad times; the first monarch who can be authoritatively stated to have owned such factories was Hishām.

A common source of new influence on both empires was the district known as Armenia, generally in Byzantine hands, but sometimes held by the Persians as the tide of war swayed to and fro on the uncertain frontier. These cities, it seems probable, were the ultimate source of the new movement in southern Persia and Iraq. The Persian motifs in Coptic textiles may really be Armenian. The Armenian textile industry influenced the cities of the Persian Gulf through the workers transported there by the Sasanians from cities captured from the Romans. The significance of such a movement requires no emphasis and would well accord with Strzygowski's recognition of Armenia as an architectural center with a character of its own influencing to some extent the provinces on its borders. Armenian textiles suddenly cease to be mentioned (except in texts deriving from earlier sources), and this might be attributed to the rise of new industries in other provinces to oust the Armanī, but I venture the theory that the destruction of Armenia by the Seljuks may have ended Armenian pre-eminence in this field.

Great attention has been paid to the ṭirāz factories, for I cannot but think that they were of first importance in the diffusion of new designs, techniques, and fabrics. There was a network of these factories from India to Spain, though not all were under a single monarch. Each petty princeling had a factory, and even today in San'a of the Yemen the imam maintains his own private factories, probably producing materials similar to those of former cen-

turies. Gifts from prince to prince included specimens of these precious stuffs; a catalogue of such a present has been set forth in the chapter on Spain. This country, which has hardly been noticed as a great center of ṭirāz factories by previous students, has, it seems, many indeed, situated in nearly all the larger towns. There are, of course, many fine examples of Moorish cloth from the country, though few are of very early date.

Wherever Jewish craftsmen were mentioned I have made a note of the fact, for their activities were especially concerned with the dyeing of cloth, and they seem to have possessed a knowledge of technical processes, which was their monopoly. Where possible I have consulted Hebrew sources in translation. Many indications of Jewish participation in the textile or dyeing trades might be discovered on a careful perusal of Jewish literature of the period.

A few incidental notes in the main body of this work, and in the appendices have been given in an attempt to sketch the intimate commercial relations with Byzantium, Europe, India, and even China. Valuable information could probably be added from Greek and medieval sources. Chaucer, Froissart, and others, might yield the names of some oriental textiles, but such chroniclers of the Crusades whose works were consulted by me are quite devoid of information on this subject.

The trend of the early Islamic art of the six hundred years of the caliphate was radically altered by the Mongol conquest, and it is fitting that this study should end at that point. It is true that some later authors have been added who lived and wrote after the fall of Baghdad; it would have been a pity not to have included them. The old weaving cities were destroyed by the Mongols, who, unlike the Arabs, spread ruin and desolation wherever they went, depopulating vast provinces, though they generally kept the craftsmen and sent them to their families as useful household slaves. New centers were later founded, perhaps with Chinese craftsmen; this partly accounts for the change in postconquest Persian art and distinguishes its character from that of other Islamic countries.

For more reliable evidence than the statements of travelers, which go to compose the larger part of this structure of conjecture, one will have to await the slow and painstaking evidence of archaeologists. The theory which has been built up around the Armenian textiles may prove to be fallacious, being based on literary manipulation rather than on the evidence of the spade. The aim has been to arrange, classify, criticize, and interpret a mass of historical material, but no claim is laid to finality.[8]

[8] It is a pleasant duty to acknowledge the kind assistance I have received from various scholars and friends. To my Arabic supervisor, Professor C. A. Storey, I am deeply indebted for careful guidance in research methods, his invaluable criticism, and the advantage of consulting his wide knowledge of Arabic and Persian literature. Professor Wace and Mr. A. W. Lawrence of the Museum of Classical Archaeology were so kind as to put many books (previously unobtainable and sometimes even unknown to me) at my disposal and to allow me to read in the museum. For books or advice I am also indebted to Professor R. A. Nicholson, Professor F. Krenkow, and Dr. R. Levy. To Professor David Talbot Rice I owe my introduction to Islamic art and the encouragement over a number of years to pursue these studies. My fellow research workers, Dr. Quraishi of Delhi University and Dr. Mu'idh Khan, also occasionally gave me notes or hints for which I have been grateful. I have the pleasure of thanking Trinity College, Cambridge, in particular, my tutor, Mr. A. S. F. Gow, and Edinburgh University for the financial assistance toward three years of research which made it possible to complete this work, which was written in 1938 and finished by March, 1939. The introduction was revised after I came to Aden in 1940 to study for a year the South Arabian dialects.

CHAPTER I

THE ORIGIN OF THE ṬIRĀZ SYSTEM

A FEATURE OF THE COURTS OF BOTH THE UMAYYAD AND ABBASID DYNASTIES WAS THE LARGE quantity of textiles required there for both clothing and furnishings. An annual gift of clothing was one of the perquisites of the caliphal officers, and was given as a gift of honor to those whom the caliph wished to reward. This gave rise to the institution of those palace factories known as ṭirāz. This term is defined by the *Encyclopaedia of Islām:*

> The word is borrowed from the Persian, and originally means "embroidery"; it then comes to mean a robe adorned with elaborate embroidery, especially one ornamented with embroidered bands with writing on them, worn by a ruler or person of high rank; finally, it means the workshop in which such materials or robes are made. A secondary development from the meaning "embroidered strip of writing" is that of "strip of writing" border, or braid in general, applied not only to the inscriptions, woven, embroidered, or sewn on materials, but also to any inscriptions on a band of any kind whether hewn out of stone, done in mosaic, glass, or faïence, or carved out of wood.[1]

Djawālīḳī gave the following account of the origin of this word:

> Ṭarz, and ṭirāz. A Persian word arabicized. The Arabs used to employ it in their speech. Ḥassān said (i.e., Ḥassān ibn Thābit):
>
> "Light-complexioned, of noble lineage, proud of bearing, of the first ṭirāz."
>
> The Arabs say: "The ṭarz of so-and-so is a fine ṭarz," i.e., his dress and appearance. So that it becomes used of any good thing. Ru'ba said: "I chose of the best of every good thing (ṭarz)."[2]

Thus it appears that the word was known to the Arabs as early as the Prophet himself.

The best general account of the ṭirāz occurs in a fairly late author, Ibn Khaldūn (1332–1406 A.D.), but some of his statements can be verified from other sources:

> One of the splendors of power and sovereignty, and one of the customs of many dynasties was to inscribe (rasama) their names or certain signs ('alāmāt), which they had adopted specially for themselves, in the borders of garments (thawb) designed for their wear, made of silk (ḥarīr) or brocade (dībādj) or ibrīsm-silk. The writing of the inscription was to be seen in the weave of the warp and woof of the cloth itself, either in thread of gold, or colored thread without gold, different from that of the thread composing that of the garment, according as the workmen decide to arrange and introduce in the process of their weaving. Thus, the royal robes (al-thiyāb al-mulūkīya) are bordered (mu'lama) with a ṭirāz. It is an emblem of dignity reserved for the sovereign, for those whom he wishes to honor by authorizing them to make use of it, and for those whom he invests with one of the responsible posts of government. Before Islam, the kings of Persia had placed upon their

[1] A. Grohmann, "Ṭirāz," *Encycl. Islām* (Leyden, 1934), IV, 785–93; "Addenda" in *Suppl.*, pp. 248–50. This is largely founded on J. von Karabacek, *Zur Orientalischen Altertumskunde,* I. *Die arabischen Papyrusprotokolle, Sitz. Ber. Phil.-Hist. Kl., Akademie, Wien,* Vol. CLXI (1909).

[2] Djawālīḳī, *Kitāb al-Mu'arrab,* ed. E. Sachau (Leipzig, 1867), p. 102 (ref. from Grohmann, *op. cit.*).

garments, either the portraits (ṣuwar), or likenesses (ashkāl) of the kings of the country, or certain figures and images designated for this use. The Muslim princes substituted their names for the figures, adding other words considered to be of good augury, which gave the praise of God. Under these two dynasties (the Umayyads, and the Abbasids), it was a most important and honorable concern.

The places for the weaving of those stuffs, situated in their palaces, were called dār al-ṭirāz. The officer (ḳā'im) appointed to inspect them was called ṣāḥib al-ṭirāz. His duty was to inspect the workmen, instruments, and weavers (ḥāka) there, and oversee the payment of their stipends (arzāḳ) and the renewal of their instruments; he also inspected their work. The princes entrusted this post to one of the great nobles of the empire or to one of their trusted clients.

It was the same in Spain under the Umayyads, and under the smaller dynasties (mulūk al-ṭawā'if) who succeeded them, as also in Egypt under the 'Ubaidites (Fatimids), and in the East at the courts of the Persian monarchs, their contemporaries. Then when the demand of the courts for luxury of all kinds diminished, as their power diminished in extent, and independent dynasties became numerous, this office fell into desuetude in most dynasties entirely, and consequently, nominations to it.

When, at the beginning of the sixth century, after Umayyads of the West had lost their power, the Almohads founded their empire, in the early period of their domination they did not adopt this institution because they followed the ideal of piety and simplicity that they learned from the Imam Muhammad al-Mahdī ibn Tūmart. For they scrupled to wear silk (ḥarīr) or gold. So thus the office of the inspector of the ṭirāz fell into abeyance at their court. However, in the latter part of this dynasty, their descendants adopted something of this usage, but it did not have the same fame as it had in former times.

In our time we have seen in the West, under the Marīnid dynasty, in all the vigour and pride of its youth, many traces of this usage which it derived from the contemporary dynasty of Ibn al-Aḥmar at Granada (629–897 H. [1231–1491 A.D.]) in Spain, which had imitated the petty dynasties and preserved traces of that ancient institution.

As regards the Turkish dynasty, which, in our days, rules over Egypt and Syria, the use of the ṭirāz there is very fashionable, by reason of the extent of their dominion, and the great civilization of their country. Yet the stuffs are not made in the palaces and castles of those princes, and they have not got at their court officers assigned for that purpose. Whatever requirements of this kind they have, are satisfied by weavers who exercise this profession, in silk (ḥarīr) or in pure gold. They call this stuff zarkash from a name borrowed from the Persian. The name of the sultan or emir is written (raḳama) upon them. The workmen make those like all the other precious objects which are destined for the use of the court.[3]

Thus, Ibn Khaldūn, without quoting any authorities, claims a Persian origin for the ṭirāz. Karabacek and others, however, deem this claim extremely hypothetical and look for an origin in the Coptic-Byzantine factories in Egypt before the Muslim conquest, and actual pieces of cloth from those places with place names inscribed on them have come to light. To counterbalance this archaeological evidence for the Western origin of the ṭirāz inscriptions there is only a post-Islamic legend which seems to imply that textiles could be found inscribed

[3] Ibn Khaldūn, *Prolégomènes historiques*, ed. by M. de Slane (Paris, 1862–68), I, 66.

in Persian. This is preserved in the *Murūdj al-Dhahab* by Mas'ūdī (332 H. [943 A.D.]), and it is repeated in Suyūṭī's *Ta'rīkh al-Khulafā':*

It is related on the authority of Abū 'Abbās Muhammad ibn Sahl who said: "I was secretary to 'Attāb ibn 'Attāb, over the Office of Troops al-Shākirīya in the caliphate of al-Muntaṣir. Now I entered one of the upper floors which was carpeted with sūsandjird carpets (bisāṭ), and a couch (misnad) and a prayer carpet (muṣallā), and pillows (wasā'id) of red and blue. Around the large carpet (bisāṭ) were medallions (dārāt) in which there were figures of people and writing in Persian. I was skilled in the reading of Persian, and there, on the right of the prayer carpet was the image of a king with a crown (tādj) on his head. I read the writing: 'This is the picture of Shirūya, the murderer of his father Abrawīz. He reigned six months.' Then I saw various portraits of kings and my eyes alighted on a picture on the left of the prayer carpet, on which was written: 'The picture of Yazīd ibn Walīd ibn 'Abd al-Malik. He reigned six months.' I was surprised at that, and at their happening to be on the right and left of al-Muntaṣir's throne and I said: 'I do not think his power will last more than six months.' And, by Allah, so it was."[4]

Though the actual inscriptions may not originate in Persia, it is very probable that the factory system called ṭirāz, which spread its network over the middle and eastern parts of the Islamic world, had its origin in the state factories of the Sasanian kings. In several Muslim works, such as the *Laṭā'if al-Ma'ārif,* and Ibn Isfandiyār's *History of Ṭabaristān,* the custom is mentioned of sending with the taxes products for which a particular province is noted. The following passage from Tha'ālibī's *History of the Kings of Persia,* written before 412 H. (1021 A.D.), claims to establish the actual reign in which this custom was innovated, although one might be justified in thinking that the practice was immeasurably older than the Sasanian period; perhaps this only standardized an ancient custom:

Balāsh (484–88 A.D.) made the inhabitants of each province supply their special products, consisting of objects de vertu (ṭarā'if), and clothing (malābis), etc. He ordered the cost of them to be reckoned as part of the land tax and imposts.[5]

Herein lies the foundation of the network of ṭirāz factories in Persia. This author, too, said Brockelmann, is sometimes more reliable than Ṭabarī himself, for he followed an earlier work in Persian in the preparation of his history. In connection with the organization of industry in pre-Islamic times, the following extract from Christensen is worthy of note:

Le vāstryōshānsālār est le "directeur de l'impôt foncier." Le nom de vāstryōshānsālār, ou vāstryōshbadh signifie le chef des agriculteurs: c'était sur l'agriculture que pesait surtout l'impôt foncier, et comme la taxe se réglait selon la fertilité et la bonne ou mauvaise culture des cantons, il a sans doute incombé au vāstryōshānsālār de veiller sur la culture de la terre, l'arrosage, etc. Probablement que le vāstryōshānsālār a été à la tête du département des finances. Il est à supposer que non

[4] Mas'ūdī, *Murūdj al-Dhahab, Les Prairies d'or,* ed. and trans. by C. A. C. Barbier de Meynard and A. J. B. Pavet de Courteille (Paris, 1861–77), VII, 291; Suyūṭī, *Ta'rīkh al-Khulafā',* trans. by H. S. Jarrett (Calcutta, 1881), p. 373.

[5] Tha'ālibī, *Histoire des rois des perses,* ed. and trans. by H. Zotenberg (Paris, 1900), p. 584.

seulement l'impôt mais aussi la taxe personelle ont été de son ressort; car il porte aussi le titre de hutukshbadh ("chef des artisans") ou préposé à tous ceux qui travaillent manuellement, esclaves, paysans, marchands, etc. Il a dû être, en somme, un ministre des finances doublé d'un ministre de l'agriculture, de l'industrie, et du commerce.[6]

The substantial truth of the assertions of Tha'ālibī is borne out by the fact that, from the earliest conquests, the Arabs frequently took clothing as part of the tax. The prophet accepted the tax of Nadjrān in robes and cuirasses, and this continued down to the time of Rashid. The inhabitants of Egypt (Miṣr) were ordered by the Arabs, as part of their contract, to supply each man with certain articles of clothing. Rūyān and Dunbāwand contracted to pay their tax in money, garments, and vessels. Transoxania sent a tribute to the early Arabs in which silk and garments were included, while Anbār contracted to pay its annual tribute along with a thousand cloaks made in Ḳaṭawān. A biography states that 'Umar ibn 'Abd al-'Azīz, the second caliph, used to sit upon Ḳaṭawān cloaks ('abā'a) made of the flock of wool.[7]

This is again confirmed by an extract from a work entitled the *Djirāb al-Dawla* of a certain Ahmed ibn 'Abd al-Ḥamīd, an extract of which is to be found in Ibn Khaldūn.[8] He listed the taxes in the reign of Ma'mūn and the articles taken along with them to Baghdad:

The Sawād	200 mantles (ḥulla) of Nadjrān
	240 raṭls of terra sigillata (ṭīn al-khatm)
Fars	30,000 bottles of rose water
Kerman	500 pieces of Yemen stuff (matā')
Sind	150 raṭls of Indian aloes wood
Sidjistān	300 mu'aiyan (with circles?)[9] garments
Khurasan	1,000 ingots of silver (var. read. 2,000)
	27,000 garments (thawb) (var. read. matā')
Djurdjān	1,000 pieces of ibrīsm-silk
Ḳūmis	1,000 ingots of silver
Ṭabaristān, Rūyān, and Nehavand	600 pieces of Ṭabarī carpets (ḳiṭ'a fursh)
	200 robes (aksiya)
	500 garments (thiyāb)
	300 napkins (mandīl)
	300 cups (djāmāt)
Gilan	20 robes (aksiya)
Armenia	20 large carpets in relief (busuṭ maḥfūra)[10]
Africa (Ifrīḳīya)	120 large carpets (bisāṭ)

[6] *L'Iran sous les Sassanides* (Copenhagen-Paris, 1936), p. 117.

[7] Balādhurī, *Futūḥ al-Buldān*, trans. by P. Hitti (New York, 1916), I, 98, 102, 104 ff., 395; *ibid.*, trans. by F. C. Murgotten (New York, 1924), II, 167; C. H. Becker, *Ibn Jauzī's Manāqib 'Omar ibn 'Abd el 'Azīz* (Leipzig, 1899), p. 31.

[8] *Op. cit.*, I, 364, cf. text pp. 322–23. Cf. G. Zaidan, *Ta'rīkh al-Tamaddun al-Islāmī* (Cairo, 1903), II, 53f and for taxes, pp. 112f.

[9] Reading mu'aiyan for mu'attab. R. Smith's emendation. See Djāḥiz, "Al-Tabaṣṣur bi'l-Tidjāra," ed. by Hasan H. 'Abd al-Wahhāb, *Revue de l'acad. arabe de Damas*, XII (1351 H. [1932 A.D.]), 326–51.

[10] Cf. Zaidan (*op. cit.*), who added 530 raṭls of raḳm! Tha'ālibī, *Thimār al-Ḳulūb* (Cairo, 1326 H. [1908 A.D.]).

Egypt, it is notable, does not send any textiles or pottery, but merely its tax of nearly 3,000,000 dinars. Yemen sent 370,000 dinars, without counting stuffs. An even earlier list than this from Ṭabaristān is preserved by Ibn Isfandiyār. It consists of the tribute which the Ispahbad sent to the Abbasid al-Manṣūr, which was the same as had gone to the Sasanians:

> The poll-tax .... 1 dirham of gold for each inhabitant
> 300,000 dirhams, each containing four dangs of white silver
> 300 bales of green silk carpets and quilts
> 300 gold-embroidered garments called Rūyānī and lafuradj
> The same amount of saffron which is of a kind unequaled in all the world.[11]

A stuff called khusrawānī (meaning "kingly, appertaining to the kings of Persia," etc.) is frequently mentioned by oriental writers of the early Muslim period, and the Kaaba even, was covered with it by some caliphs. What exactly this cloth was, I have not been able to discover, though I suspect that it was a term applied to cloth of the type made in the Sasanian palace factories. Hints at the nature of the design on these Persian textiles are occasionally to be encountered in the sources. Ibn al-Faḳīh,[12] quoting al Kalbī, wrote (290 H. [903 A.D.]): "Bahrām used to esteem the Arabs and ride the camel. He is to be seen in the pictures which the Persians paint on their pottery (awānī) and draw on their carpets (busuṭ) and mats (fursh), always riding his camel."

Perhaps the following extract from the *Thousand and One Nights*[13] can give a clue to what the Arabs meant by khusrawānī: "They clothed her with ornaments and cloaks (ḥulla) of the clothing of the Sasanian kings (mulūk al-akāsira), including a garment adorned (manḳūsh) with red gold, having pictures of beasts and birds upon it." This kind of cloth was called ṭardwaḥsh by the Fatimid monarchs and the Mamelukes. Again, Mas'ūdī [14] reported that the Emperor Maurice of Byzantium gave Parwīz a thousand pieces of brocade from the treasury (dībādj khazā'inī) woven (mansūdj) with red gold and other colors. This word khazā'inī is used to refer to the cloth in the official warehouses of the Abbasid caliphs.

From the beginning of Muslim domination in Egypt, and probably from long before that, Coptic cloth was imported into the Hejaz, to Mecca and Medina, for Azraḳī said: " 'Umar ibn al-Khaṭṭāb covered (literally 'clothed') the Kaaba with Ḳubāṭī (Coptic cloths) from the treasury. He used to write concerning it to Egypt (Miṣr) where it was woven for him, and then 'Uthmān did the same after him. When Mu'āwiya ibn Abī Sufyān came, he covered it with two coverings (kiswa), 'Umar's covering of ḳubāṭī, and another of brocade (dībādj)."[15] In a later chapter I have identified those ḳubāṭī stuffs with the materials from the Tinnīs-Damietta group of factories in Egypt, which almost invariably supplied the Kaaba covering, but no indication is given as to the place of origin of the ḳubāṭī here.

[11] Ibn Isfandiyār, *History of Ṭabaristān,* trans. by E. G. Browne (Leyden-London, 1905), p. 118.

[12] Ibn al-Faḳīh, *Compendium libri Kitāb al-Boldān,* ed. M. J. de Goeje. *Bibliotheca Geographorum Arabicorum* [=*B. G. A.*] (Leyden, 1885), V, 178.

[13] *Alf Laila wa-Laila* (Beyrouth, 1914), I, 133.

[14] Mas'ūdī, *op. cit.,* II, 220–21.

[15] *Die Chroniken der Stadt Mekka,* ed. F. Wüstenfeld (Leipzig, 1857–61), I, 176 (Azraḳī).

A passage from the *Laṭā'if al-Ma'ārif*[16] would supply a date for the existence of the ṭirāz system in this northern Egyptian group of factories as early as the time of 'Umar, for it says:

Djāḥiz (150–255 H. [767–869 A.D.]) said: "Umar ibn al-Khaṭṭāb said that the land of Egypt (Miṣr) at one time produced 4,000,000 dinars, but others assert that it produced 2,000,000 dinars—apart from the recognised number of horses, riding animals, and the fine linen cloth of the ṭirāz (diḳḳ al-ṭuruz)." He further said: "It is well known that cotton pertains to Khurasan, and that linen (kattān) pertains to Egypt. The other peoples in various countries have a certain amount of them which does not, however, equal the quantity in those two places. Sometimes the price of a load of the brocade (diḳḳ [17]) of Miṣr, consisting of linen would fetch the price of a hundred thousand dinars."

As was seen, Egypt in the time of Ma'mūn produced 3,000,000 dinars, but the application of the word ṭirāz to the products of so early a date may be an anachronism on the part of Djāḥiz.

The *Aghānī*[18] uses a phrase of very doubtful significance, which may refer to an inscribed carpet. It states that Ibn Maiyāda had a ladylove who spread out a carpet for him inscribed or quite as likely "striped" and knotted (? firāsh marḳūm maṭmūm). This poet lived on into the early Islamic period.

Superficially, a far more convincing piece of evidence for the early existence of the ṭirāz system at this period is the historical note in al-Baihaḳī's *Kitāb al-Maḥāsin wa'l-Masāwī*,[19] which sets a precise date for the change of the ṭirāz inscription from Greek to Arabic. There is evidence to confirm the story that 'Abd al-Malik did innovate a purely Muslim coinage as Baihaḳī asserts; nevertheless, in spite of this, and despite the comparative earliness of this author—of whom very little is known, except that he was still living in the reign of the Caliph al-Muḳtadir bi'llāh (295–320 H. [908–932 A.D.])—it must be kept in mind that he is the only early author to make such an assertion:

Al-Kisā'ī relates: "I entered the presence of Rashid one day when he was in his audience-hall (īwān), and in front of him lay a great deal of money which had been divided into bags of ten thousand dirhams each, and which he had ordered to be distributed among his special servants. In his hand was a dirham with a glinting inscription, which he was considering. Now he used to converse with me frequently, and he said: 'Do you know who originated this custom of the inscription on gold and silver?' 'Yes, my lord,' I replied. 'It was 'Abd al-Malik ibn Marwān.' 'What was his reason for doing so?' he said. 'I do not know, apart from the fact that he was the first to institute this inscription,' was my reply. Then he said, 'I shall tell you.

'Paper (ḳirṭās) belonged to the Greeks, and most of the inhabitants of Egypt were Christians following the religion of the emperor, the emperor of the Greeks. The paper was stamped (ṭarraza[20])

[16] Tha'ālibī, *Laṭā'if al-Ma'ārif*, ed. P. de Jong (Leyden, 1867), p. 176. For the revenues of Egypt see Maḳrīzī, *Khiṭaṭ, Description topographique et historique de l'Égypte*, trans. by U. Bouriant and P. Casanova (Paris, 1900–20), p. 283.

[17] Maḳdisī, [Muḳaddasī], *Descriptio imperii Moslemici*, ed. M. J. de Goeje, *B.G.A.* (Leyden 1906), III, 203. Perhaps ṭirāz should be understood as "embroidery" in this passage.

[18] *Kitāb al-Aghānī* (Cairo, 1927), II, 278.

[19] Ed. F. Schwally (Giessen, 1902), p. 498.

[20] Translated "stamp" in accordance with Karabacek's researches in his *Papyrus-Protokolle*.

in Greek with the inscription (ṭirāz) "Father, Son, and Holy Ghost."[21] Thus it continued as it had been, during the early period of Islam, until 'Abd al-Malik came to the throne, and noticed it, being of quick perception. One day he was busy when a paper passed under his hands and he looked at the ṭirāz on it and ordered it to be translated into Arabic, which was duly done. It displeased him, and he said: "What a very disagreeable thing it is for the faith and Islam, that this should be stamped on the paper and that it should be borne on the pottery (awānī), and garments (thiyāb), which, both, are made in Egypt, and the other things made in that country, such as curtains (sutūr), etc., which bear the ṭirāz on account of its (Egypt's) extent and abundant wealth. Its inhabitants produce this paper and it is distributed to all regions and countries with a heathen stamp emblazoned on it."

'So he ordered a letter to be written to 'Abd al-'Azīz ibn Marwān, who was governor of Egypt, to cancel the ṭirāz on the garments, paper, and curtains, etc., which used to bear it. He was also to make the manufacturers of paper stamp it with the "Chapter of Unity" (Sura cxii) "God testifies that he is God alone." This is the ṭirāz of the paper only (or specially), unto this day, neither more nor less, nor altered in any way. He wrote to the governors of all regions to cancel all the paper stamped with the Greek stamp in their provinces, and to punish those who were found to have any of it in their possession after the prohibition, with severe chastisement and lengthy imprisonment.

'When the paper with the new stamp was issued and some was taken to Byzantium, the news spread abroad till it reached the emperor, and he had this stamp translated. It displeased and annoyed him so that he went red with anger. He immediately wrote to 'Abd al-Malik. "The manufactures and other articles which bear the ṭirāz belong to Byzantium, and they have continued to be stamped with the Greek ṭirāz until you canceled it. If the caliphs previous to you have acted rightly, you are in error, and if you have acted rightly your predecessors were in the wrong. Choose the alternative you prefer. I am sending you a present worthy of your rank, and I should like you to return to the former ṭirāz on all the precious articles which previously bore it—a requirement, for the fulfilment of which I should be grateful to you."

The story goes on to tell how the caliph refused the emperor's request three times, until he threatened to stamp a phrase containing an imprecation of the prophet on the Byzantine coinage which was used in Muslim countries also, for they lacked a good coinage of their own. 'Abd al-Malik replied by instituting the new coinage mentioned above.

It is strange that the other historians should be silent on this point, and that Ṭabarī and the earlier Balādhurī,[22] though repeating this very story, should all omit to mention fabrics [23] and pottery. Very little reliance, then, must be placed on this passage of Baihaḳī, which smacks more of legend than actual fact.

The first Umayyad known to have ṭirāzī garments was Marwān, probably Marwān II.[24]

[21] These words seem to be transliterated into Arabic from the Syriac: ܐܚܐ ܩܕܫܐ ܘܪܘܚܐ ܩܕܝܫܐ . Is Baihaḳī utilizing a Syriac source?

[22] Cf. Damīrī, *Kitāb al-Ḥayawān,* trans. by A. S. G. Jayakar (London-Bombay, 1906–8), I, 124f; Balādhurī, *Futūḥ al-Buldān,* ed. M. J. de Goeje (Leyden, 1866), p. 240; *ibid.,* trans by Hitti, I, 383.

[23] Hitti's translation (following Zaidan [*op. cit.,* I, 103; cf. also p. 102 for the article "Ṭirāz"] of ṭawāmīr as "fabrics" seems unjustified in the context, and the word describing where these articles were stamped—at the top (ru'ūs, literally "heads")—could not apply to garments, whereas it fits very well with the sense of paper.

[24] An example bearing his name is quoted by Grohmann, *op. cit.,* p. 792. See also R. Guest and A. F.

Ḳalḳashandī [25] stated that both the Umayyads and the Abbasids had a dār al-ṭirāz at Alexandria, though he did not give any date for this, and the merest hints of its origins in the Umayyad period are given by the historians. Ibn 'Abd Rabbihi stated: "Hishām ibn Ḥassān said, 'I saw on al-Ḥasan al-Baṣrī a shirt (khamīṣa) with a border ('alam), in which he used to pray, the gift of Maslama ibn 'Abd al-Malik.' " [26] This is worthy of note because the ṭirāzī garments are often described as "mu-'lam," and Maslama was responsible for the administration of certain royal factories. The same author noted that Yazīd ibn 'Abd al-Malik had an officer over the stores (khazā'in) and the treasuries (buyūt al-amwāl).

Mas'ūdī[27] almost seems to imply a ṭirāz factory system in the time of Sulaimān (96–99 H. [714–17 A.D.]) for he wrote:

Sulaimān was a large eater and his appetite exceeded all measure. He used to wear fine robes, and robes of variegated silk (washī). In his day excellent washī was made in Yemen, Kufa, and Alexandria. All the people used to wear washī for their mantles (djubba), cloaks (ardiya), trousers (sarāwīlāt), turbans ('amā'im), and caps (ḳalansuwa). Nobody of his household used to enter his presence except in washī; thus it was with his friends, governors, and household. He used to wear it while riding, or in the pulpit (mimbar). None of his servants, even the cook, entered his presence except in washī; for the latter used to come before him wearing washī on his breast, and a long hat (ṭawīla) of washī on his head. He (Sulaimān) even ordered that his shroud should be made of washī.

In later times, there was a ṭirāz in Yemen, but I have not come across any note of such an institution in al-Kufa. It seems unlikely that the caliphs would establish a state factory in so turbulent a city. Though no ṭirāz is mentioned in Damascus until Mameluke times, it seems likely that one would be there under the Umayyads. No inscription is noted on the washī of Sulaimān's court.

Hishām's reign (cf. p. 68) provides surer ground. Mas'ūdī [28] claimed:

Hishām used to be fond of robes (kisā'), and carpets (fursh), and warlike materials, and breastplates (la'ma) . . . . In his days there were made, striped silk (or silk with inscriptions on it ? al-khazz raḳm) and velvets (ḳuṭuf).

No place of manufacture is given. The word raḳm can bear the sense of "embroidery, striped cloth, or writing," but as this striped cloth was common long before Hishām, it is just possible to understand this word in the sense of "silk with inscriptions on it." This khazz-raḳm was one of the products of Armenia, and it seems likely that it means striped cloth there. Nevertheless, the introduction of the ṭirāz inscription would agree very well with what is known of the character of Hishām, who was a great builder, interested in the improvement of the land, besides being a man of fashion, for Ibn 'Abd Rabbihi [29] said that nobody was fonder of dress than was Hishām. On a pilgrimage it took six hundred camels to carry his robes.

Kendrick, "The Earliest Dated Islamic Textiles," *Burlington Mag.*, LX (1932), 185–91, Figs. B, C.

[25] Ḳalḳashandī, *Ṣubḥ al-A'shā* (Cairo, 1331–18 H. [1913–19 A.D.]), IV, 7.

[26] Ibn 'Abd Rabbihi, *Al-'Iḳd al-Farīd* (Cairo, 1331 H. [1913 A.D.]), I, 103; II, 336.

[27] *Op. cit.*, V, 400.

[28] Mas'ūdī, *op. cit.*, V, 466. Cf. Chapter II of this investigation. See also J. von Karabacek, *Die persische Nadelmalerei Susandschird* (Leipzig, 1881), which also derives the sense of "writing" from raḳm here.

[29] Ibn 'Abd Rabbihi, *op. cit.*, II, 338.

Of Walīd II, the *Aghānī* [30] says: "Walīd used to be brought clean white garments, consisting of caliphal garments (thiyāb al-khilāfa) and pray a good prayer in them." The term used is applied in later times to those garments with the ṭirāz border which were part of the insignia of the caliphate.[31]

On the fall of the Umayyad dynasty, the Abbasids took over most of their existing institutions, such as the dār al-ṣabbāghīn—perhaps some such factory, in Ramla, which had been founded by the Caliph Sulaimān.[32]

[30] *Aghānī,* VII, 83.

[31] Ḳalḳashandī, *op. cit.,* III, 274: "One of the insignia of the caliphate consists of thiyāb al-khilāfa."

[32] See Chapter XIV of this investigation.

SUPPLEMENTARY NOTES

Another Sasanian textile, a carpet which the Arabs took as spoil, is described in Ṭabarī (*Annales,* ed. M. J. de Goeje [Leyden, 1879–1901], Ser. I, V, 2453 [year 16]). Maḳrīzī gave the following particulars of Hishām ibn ʿAbd al-Malik: "Ce Khalife se fit faire des vêtements brodés à sa taille; il en fit tellement faire, qu'il fallut sept cents chameaux pour transporter ceux qu'il choisit. Cette charge était composée des habits dont il se revêtit, mais combien y en avait-il qu'il ne portait pas!" ("Histoire d'Égypte de Makrizi," trans. by E. Blochet, *Revue de l'Orient Latin,* VIII [1900–1901], 175).

Djahshiyārī stated: "One of his (Hishām's) scribes was Tadharī b. Asṭīn, the Christian whom he invested with the government of Ḥimṣ. Djunnāda b. Abī Khālid used to be his secretary for the ṭirāz factories and his name is to be found on the Hāshimī fabrics" (*Kitāb al-Wuzarā'* [Cairo, 1938], p. 60. For Hāshimī boots see Appendix I).

Thaʿālibī gave a rather apocryphal account of Abarwīz and his page to whom the monarch said: "What are the softest garments?" He replied "In spring, the Shahidjānī (Mervian), and Dabīḳī kinds, and, as for summer, the Tawwazī and Shaṭawī, and for autumn, the munaiyar (stuff with a double woof or weft, or striped stuff) of Rayy, and the mulḥam (see Chapter II) of Merv, and, for winter, khazz-silk, and furs (ḥawṣal), and, in extreme cold, silk lined with silk (khazz) between which is ḳazz-silk." He said, "Tell me of the best and softest of carpets (fursh)." He replied, "They are mattresses (bardhaʿ) of brocade stuffed with feathers, placed one on top of the other" (*Histoire des rois des perses,* p. 710).

This passage is indicative of the fashion about 412 H. (1021 A.D.) for, according to Christensen, this is not to be found in the Pahlavi version.

CHAPTER II

Part 1

THE ṬIRĀZ UNDER THE ABBASIDS

BAGHDAD, OF COURSE, WAS THE GREAT CENTER OF ISLAMIC MANUFACTURES, QUICKLY RISING to prominence after its foundation by al-Manṣūr in 145 H. (762 A.D.). Though the capital was famous for its textiles, the royal factories there seem scarcely to have been noticed by Arab authors, despite the fact that they must have been extensive. The court required the products not only of the Baghdad factory, but also those of the factories of Fars and Khuzistan as well as of many other places in Persia, to say nothing of the Egyptian group. The *Aghānī* constantly alludes to gifts of robes of honor (khil'a) from the caliph to his favorites, yet the site of a ṭirāz is known only from so late an author as Ibn al-Djawzī.

The earliest ṭirāz factories were probably in the Round City built by al-Manṣūr, which continued to be the seat of government down to the reign of Rashid (170–93 H. [786–809 A.D.]). Ibn al-Balkhī [1] stated that "Abū 'l-'Abbās left four shirts (ḳamīṣ), and five pairs of trousers (sarāwīlāt), four ṭailasāns (mantle, scarf, or hood), and three silk miṭraf-robes[2] (maṭārif khazz)," but Manṣūr left great wealth. The following extract from Ibn Khaldūn is suggestive of a factory, or at least, a store in the palace:

> Now this son of his, al-Mahdī, the father of Rashid, came to him when he was in his majlis one day, consulting his tailors (khaiyāṭ) about the mending of the torn garments of his household, for he used to avoid providing his family with new clothes at the expense of the treasury. Al-Mahdī disliked this and said: "Oh Commander of the Faithful, I shall bear the expense of the clothing of this household for the year, from my own pension." Manṣūr replied: "Very well," nor did he stop him from doing so, for he did not permit that any of the property of the Muslims should be used to defray the expenses thereon.[3]

By the time of Harun al-Rashid, the system was well organized as may be concluded from the following passage extracted from the *Kitāb al-Wuzarā'* of al-Djahshiyārī (ob. 331 H. [942 A.D.[4]]): "Rashid used to call Dja'far 'my brother,' and share his robe with him. He invested him with the post (barīd) of the provinces, and the mints (dūr al-ḍarb), and the ṭirāz factories (dūr al-ṭuruz) in all the provinces." The honor of this post may have been all the greater because of the lucrative perquisites attached to it. According to the *Ma'ālim al-Ḳurba*[5] it was Rashid who invented the measure for cloth known as the dhirā' al-Sawād,[6]

[1] Al-Balkhī, *Livre de la création et de l'histoire,* ed. and trans. by C. Huart (Paris, 1899), VI, 89. See also *Aghānī* (Bulaq, 1285 H. [1868 A.D.]), IX, 121. Manṣūr introduced long ḳalansuwa caps, and the wearing of black silk. Cf. Ṭabarī, *Annales,* ed. M. J. de Goeje (Leyden, 1879–1901), Ser. III, I, 417–18.

[2] Miṭraf, a mantle. See R. Levy, "Notes on Costume from Arabic Sources," *Journ. Royal Asiatic Soc.,* 1935, pp. 322–23.

[3] [Ibn Khaldūn], *A Selection from the Prologomena of Ibn Khaldūn,* ed. D. B. Macdonald, *Semitic Study Ser.,* No. IV (Leyden, 1905), 17ff.

[4] Photostat of this work, ed. H. von Mzik, p. 249.

[5] Ibn al-Ukhuwwa, *Ma'ālim al-Ḳurba,* ed. R. Levy, Gibb Mem. Ser. (London, 1938), n.s., XII, Nos. 115–16.

[6] The Sawād here probably means Iraq in general.

which was the length of the forearm of a negro slave. Mas'ūdī,[7] however, in the *Murūdj al-Dhahab* called it the "black yard" (dhirā' aswad) and said: "Thus is named the dhirā' established by al-Ma'mūn for the measuring of cloths, houses, and timber. It is composed of twenty-four fingers (iṣba')." However, this suits the character of Rashid better than that of Ma'mūn, for, according to Balādhurī,[8] Harun established industries in the frontier and coastal cities.

Already in Harun's time, too, inscriptions other than those of a purely official nature were being embroidered on garments, for Ibn Khalliḳān said:

> Abu 'l-'Atāhiya, having obtained the permission to offer a present to the caliph on the festival of Nairūz (New Year) and Mihradjān, brought him on one of those anniversaries, an ample vase (barnīya) containing a perfumed garment (thawb) of delicate texture, on the borders (ḥawāshī) of which he had inscribed the verses just given. On this, the caliph had some intention of bestowing 'Utba upon him, but she recoiled with dislike, and exclaimed: "Commander of the Faithful, treat me as becomes a female and a member of your household. Would you give me up to an ugly man who sells jars, and gains his livelihood by verses?" [9]

Another work supplies information about the position of the ṭirāz during the reigns of his sons Amīn and Ma'mūn, between whom and another brother, al-Ḳāsim, Harun divided the empire. He had a contract drawn up between the two brothers and himself to settle the division of power among them, and Amīn acknowledged Ma'mūn as "governor of the frontiers of Khurasan, its towns and districts, with control of the taxes (ṣadaḳāt), the tithing, and the tithes, the Post (barīd), and the ṭirāz factories" (ṭuruz).[10] Ma'mūn's power extended over

[7] Mas'ūdī, *Murūdj al-Dhahab, Les Prairies d'or* (Paris, 1861–77), I, 183.

[8] Balādhurī, *Futūḥ al-Buldān,* ed. M. de Goeje (Leyden, 1866), p. 163; *ibid.,* trans. by P. Hitti (New York, 1916), I, 252. For an allusion to the ṭirāz in the reign of al-Hādī see C. van Arendonk, *De Opkomst van het Zaidietische Imamaat in Yemen* (Leyden, 1919), p. 196.

[9] *Ibn Khallikan's Biographical Dictionary,* trans. by M. de Slane (Paris-London, 1843–71), I, 203, following Mubarrad's *Kāmil.* Bīrūnī, *Kitāb al-Djamāhir,* ed. F. Krenkow (Hyderabad, 1938), p. 58, illustrates the luxury of the Abbasid court in Harun al-Rashid's reign. He quotes a poet: " 'The world is nothing if women rule it. Should they rule a single day, then farewell (salām) to the world.' If you desire a proof of his veracity, then cite such women as Zubaida (the wife of Harun), praiseworthy for most of her good qualities, and her rosary of pomegranate jacinths (Rummānī yāḳūt) like nuts, strung together like the slices of a melon. If any one of them were to be found today, they would easily be recognized to have belonged to her. Think of the pearls pierced with cross-shaped holes (taṣlīb) so that she might have garments made with them for her maids."

Since the above page was written, I have found another passage in Ibn Abī Uṣaibi'a, *'Uyūn al-Anbā' fī Ṭabaḳāt al-Aṭibbā',* ed. A. Müller (Cairo, 1299 H. [1882 A.D.], Preface, Königsberg, 1884), I, 136, which says that every year in Muharram, the physician Bakhtīshū' ibn Djibrā'īl used to receive, in addition to other gifts at different times of the year: Royal ṭirāzī gold-spangled linen cloth (al-ḳaṣab al-khāṣṣ al-ṭirāzī), 20 pieces (shiḳḳa); ṭirāz cloth with a warp of silk, and a woof of some other material (al-mulḥam al-ṭirāzī), 20 pieces (shiḳḳa); silk of Manṣūr (the caliph) (al-khazz al-Manṣūrī), 10 pieces; stretched silk (? al-khazz al-mabsūṭ—or carpet silk ?) 10 pieces; Yemen figured silk (al-washī al-Yamānī), 3 robes (thawb); figured naṣībī stuff (al-washī al-naṣībī), 3 robes (thawb); ṭailasāns (head scarves), 3 ṭailasāns; he also received sable (sammūr), marten (fanak), ḳ maḳ m (ermine), stoat (dalaḳ), and squirrel (sindjāb) furs.

This physician served Harun al-Rashid for twenty-three years, and the author amused himself by calculating the immense amount of clothing he received.

[10] *Die Chroniken der Stadt Mekka,* ed. F. Wüstenfeld (Leipzig, 1857–61), pp. 166 and 162 (Azraḳī); Ibn Taghrībirdī, *al-Nudjūm al-Ẓāhira,* ed. T. W. J. Juynboll and B. F. Mattes (Leyden, 1855–61), I, 544.

Persia and the East, which indicates that there were factories there in Rashid's time at least.

Again, Taghrībirdī[11] said: "In the year 194 H. (809–10 A.D.), in the first Rabī', Amīn proclaimed his son Mūsā heir-apparent . . . . he nominated as his vizier Ali ibn 'Īsā ibn Māhān. Al-Ma'mūn, when he heard of the deposition of al-Ḳāsim from the regency of the frontiers, had postal communication with Amīn broken off, and ceased to inscribe his name on the ṭirāz, and the coinage." The same information is in al-Balkhī's *Kitāb al-Bad' wa'l-Ta'rīkh,*[12] which says that Ma'mūn cast out the name of Amīn from the "ṭirāz, the dirhams, and the dinars." Of Ma'mūn, too, the *Ta'rīkh-i Baihaḳī*[13] reports: "Ma'mūn made him (Riḍā, the Alī-ide) heir apparent, and abandoned the black banners ('alam), using green instead. They inscribed the name of Ridā' on the dinars, dirhams, and the ṭirāz of robes (djāma)."

According to the *Čahār Maḳāla,*[14] Ma'mūn, when preparing to visit Būrān on their wedding day would not wear a robe (ḳabā') of Ma'danī[15] satin (aṭlas), nor royal satin (malikī), nor ṭamīm (a kind of precious brocade stuff[16]), nor nasīdj (woven stuff), nor mumazzadj (a garment mingled with gold and inscribed with a name[17]), nor miḳrāḍī (cut, slashed, or shorn?) stuff,[18] nor satin (aksūn), but decided to wear a robe of plain black.

Of the Caliph al-Mutawakkil (232–47 H. [847–61 A.D.]), Mas'ūdī stated:

'He wore garments called thiyāb mulḥama (a stuff with a warp of silk, but a woof of some other material[19]), which he preferred to all other stuffs, and this fashion was followed by all the members of his household and then spread among the people. Everyone wished to imitate the sovereign, so the stuffs of that weave reached high prices, and the manufacture was perfected so as to respond to the fashion and to satisfy the taste of the prince and his subjects. In our own time (*ca.* 332 H. [943 A.D.]) some of these stuffs are found; they are known under the name of Mutawakkilī. It is a kind of cloth of a very beautiful weave (thiyāb al-mulḥama), and of an excellent color (ṣibgh).[20]

[11] *Ibid.*, pp. 551–52.

[12] Al-Balkhī, *op. cit.*, text, VI, 108.

[13] *Ta'rīkh-i-Baihaḳī* (Calcutta, 1862), p. 161 (ref. from Karabacek).

[14] Niẓāmī 'Arūḍī, *Čahār Maḳāla,* ed. Mirzā Muhammad Ḳazwīnī, Gibb Mem. Ser. (London, 1910), XI, 110; *ibid.*, trans. by E. G. Browne (London, 1921), pp. 20 and notes.

[15] Maḳrīzī, *Histoire des sultans mamlouks de l'Égypte,* trans. by M. Quatremère (Paris, 1837–45), II, 33. He derives it from a place in Armenia, Ma'dan. Another suggestion is that 'Adanī (from Aden) should be read. The name ma'danī, however, occurs too frequently to be rejected.

[16] A. von Kremer, *Beiträge zur arabischen Lexikographie, Sitz. Ber. Phil.-Hist. Kl., Akad. Wien,* CV (1884), 438: "Eine Art kostbaren Kleiderstoffes, Goldbrokat." Cf. Maḳrīzī, *op. cit.*, I, 410, l. 12.

[17] R. Dozy, *Supplément aux dictionnaires arabes* (2d ed; Paris, 1927), II, 587. N. de Khanikof, "Mémoire sur Khâcâni," *Journ. asiatique,* sixième sér., V (1865), 348, where an alternative from mamzūdj is given (twelfth cent.). Ibn al-Athīr, *Chronicon,* ed. C. J. Tornberg (Leyden, 1851–76), XII, 154, mentioned: "Twelve thousand garments (thawb) of mumazzadj, interwoven with gold." See *infra.* Mustarshid billāh.

[18] The notes of the *Čahār Maḳāla* (p. 110) quote Māfarrūkhī (Brit. Mus. Or. 3601, fol. 38b): "He said in his final injunctions: 'Make my shroud (akfān) of Rūmī miḳrāḍī cloth, and a gold turban of ḳaṣab and a garment (thawb) of Egyptian Dabīḳī.' He was told that only white cotton garments were good for shrouds, but he said: 'God forbid! I have mixed with his creatures for sixty years and I have always associated with them in brocade (dībādj), silk (ḥarīr), and ḳaṣab.' "

[19] Dozy, *op. cit.*, II, 522, and *idem, Dictionnaire détaillé des noms des vêtements chez les Arabes* (Amsterdam, 1845), p. 60.

[20] Mas'ūdī, *op. cit.*, VII, 190.

Abu 'l-Ḳāsim, too, used the term Mutawakkilī to describe a very fine kind of garment:

. . . . [a] towel of light Mutawakkilī Dabīḳī, embroidered with a ṭirāz border, with a velvet-like pile (mukhmal), made in Egypt, with two badges (?'alam), and two bands (zunnār) and their patterns of fine thread, of perfect length, exquisite width, with a short pile, bordered with a fringed (?) border (ḥāshiya mashḳūḳa), softer than ḳazz-silk and finer than floss-silk (khazz).[21]

Presumably, the mulḥam stuffs were made in the palace factories of Baghdad or Samarra, if there were any there, and that is extremely likely, for al-Mu'taṣim, when he built the city, brought craftsmen there from all quarters. Even in Ma'mūn's day these stuffs of mixed materials were well known, for a courtier said:

Poetry is a carpet (bisāṭ) of wool (ṣūf) and when goat hair (sha'r) is mixed with pure wool, its beauty is evident through the combination, and its luster through the composition.[22]

After al-Mutawakkil (ob. 247 H. [861 A.D.]), there followed a period of anarchy in which four caliphs succeeded one another in quick succession. In 256 H. (870 A.D.) in Mu'tamid's reign there are again notices on ṭirāz. He was dominated by his more vigorous brother, al-Muwaffaḳ, who fell out with the semi-independent governor of Egypt, Ibn Ṭūlūn. When Muwaffaḳ foiled a plot of Ahmed ibn Ṭūlūn to free the caliph from his overzealous control, the Egyptian, by way of venting his spite on Muwaffaḳ, revenged himself, according to Ibn al-Athīr, in the following way:

In the year 269 H. (882–83 A.D.), al-Mu'tamid (the puppet caliph) cursed Aḥmed ibn Ṭūlūn at the Public Audience (dār al-'āmma) and ordered this curse to be pronounced on the pulpits . . . . for Ibn Ṭūlūn had stopped the name of al-Muwaffaḳ from being mentioned in the prayer (khuṭba), and dropped the inscription of his name from the ṭirāz.[23]

The same item of information is to be found in a curtailed form in Abu 'l-Fidā'.[24] Ibn al-Athīr said further:

[In Muharram of 279 H. (892 A.D.), Mu'tamid] made al-Mu'taḍid bi'llāh Abu 'l-'Abbās Ahmed ibn al-Muwaffaḳ heir-apparent, and they (the nobles) bore witness that he (Mu'tamid's son) was deprived of the succession. He dropped his name from the coinage, prayer, and the ṭirāz-inscriptions.[25]

The importance of the ṭirāz as one of the insignia of power is clearly shown by the above passages.[26]

A further passage, referring to the energetic al-Muwaffaḳ, which shows the extent of the ṭirāz organization, is to be found in Ibn Ṭiḳṭaḳā's *al-Fakhrī,* which gives the following account of the vizier al-Hasan ibn Makhlad with Muwaffaḳ. The vizier said:

[21] Abu'l-Muṭahhar al-Azdī, *Ḥikāyat Abi'l-Ḳāsim,* ed. A. Mez (Heidelberg, 1902), p. 42. See also Chapter XVI. For the exports of Dabīḳī to Iraq in 517 H. see Maḳrīzī, *Khiṭaṭ* (Bulaq, 1853), I, 472.

[22] Mas'ūdī, *op. cit.,* VII, 7.

[23] Ibn al-Athīr, *Ta'rīkh* (Bulaq, 1290 H.), VII, 143 (ref. from Hasan Hawary).

[24] Abu'l-Fidā', *Mukhtaṣar fī Akhbār al-Bashar* (Istanbul, 1286), II, 56 (ref. from Hasan Hawary).

[25] Ibn al-Athīr, *op. cit.,* VII, 161–62.

[26] The *Répertoire chronologique d'épigraphie arabe,* ed. E. Combe, J. Sauvaget, and G. Wiet (Cairo, 1931), II, 212, 232, 248–53 confirms the above.

Once I was in the presence of Muwaffaḳ, the son of al-Mutawakkil, and I saw him feel a garment over with his hand, then he said to me: "Hasan, this stuff pleases me. How much have we in the stores (khazā'in)?" Thereupon I brought out of my boot a little roll (dastūr) in which was set forth the total of goods and stuffs in the stores, given in detail. Therein I found 6,000 pieces of this kind of stuff. "Hasan," said al-Muwaffaḳ to me, "we have nothing to wear. Write to the country (of origin) to make 30,000 pieces of this kind of fabric, and to send them with the least possible delay.[27]

The action of Ibn Tūlūn, in casting out the name of al-Muwaffaḳ from the ṭirāz inscriptions had important consequences. This was a slight which could not be ignored at Baghdad. The trouble must have come to a head when the time came for the Kaaba covering to be woven, which usually took place in Egypt. Muwaffaḳ could not afford to allow his prestige to suffer by sending a Kaaba covering which did not bear his name, for the ṭirāz was, in its way, a kind of propaganda for the ruling dynasty. Iṣṭakhrī [28] (340 H. [951 A.D.]) reported that in this time the Kaaba covering was made at Shustar. Thus, it seems feasible to suppose that it began to be manufactured in the East some time about the year 270 H. (883 A.D.). This, however, is purest conjecture, for in 290 H. (903 A.D.) Egypt was recovered by the Caliph al-Muḳtafī.

Another work with the title of *Kitāb al-Wuzarā'*, composed by a certain al-Hilāl al-Ṣābi' (359–448 H. [969–1056 A.D.]), gives a very full account of the expenditure on the palace factories, in which the sum spent on ṭirāzī stuffs seems to have been but one item. So far as I have been able to ascertain, there were very few royal factories for materials, apart from arsenals and paper factories, in any other cities. The manufactures enumerated in the list could only be carried on around a wealthy and luxurious court, and so they were probably only to be found in such cities as Baghdad and Cairo.

When the brothers Ibn Furāt, Ahmed, who was the superior until he died in 291 H. (903–4 A.D.), and Ali, who followed him, made out the budget for the imperial expenditure, they allotted the revenue as follows:

The maintenance of the employees whose month is fifty days, consisting of those engaged to work in the public supply magazine (sharāb al-'āmma), and in the clothing magazines (khazā'in al-kiswa), and the craftsmen, comprising goldsmiths (ṣāgha), tailors (khaiyāṭ), fullers (ḳaṣṣār), blacksmiths (asākifa, which may also mean shoemakers, carpenters, or just artisans), ironworkers (ḥaddād), menders (raffā'), furriers (farrā'), makers of ṭirāz (muṭarriz), upholsterers (nadjdjād), papermakers (warrāḳ), perfumers ('aṭṭār), makers of the borders of robes (mushahhir),[29] carpenters (nadjdjār), glass cutters (kharrāṭ), makers of chests (asfāṭī), etc. This is in addition to the keepers (khuzzān), and artificers employed in the arsenal (khizāna al-silāḥ), and the saddlery store (khizāna al-surūdj) in the same. Each store and section has a separate check drawn on the divan, in all, three thousand dinars a month, that is to say, a hundred dinars a day.[30]

[27] Ibn al-Ṭiḳṭaḳā, *al-Fakhrī, Geschichte der islamischen Reiche . . . .*, ed. W. Ahlwardt (Gotha, 1860), p. 298; *ibid.*, trans. by E. Amar, *Archives marocaines,* XVI (Paris, 1910), 436–37 (ref. from Hasan Hawary).

[28] See Chapter IV of this investigation. The disparity in dates is not so great as it might seem, for Iṣṭakhrī probably based these statements on earlier sources.

[29] Dozy, *Supplément . . . .*, I, 796.

[30] Al-Hilāl al-Ṣābi', *Kitāb al-Wuzarā'*, ed. H. F. Amedroz (Leyden, 1904), p. 17. See also A. von Kremer, "Das Einnahmebudget des Abbasidenreiches vom Jahre 306 H. (918–19 A.D.)," *Denkschriften d. phil. hist. Klasse d. Kais. Akad d. Wiss. in Wien,* Bd. XXXVI (1887).

It will be noted that these expenses are concerned solely with the upkeep of the Baghdad factories. As will be seen below, in the provinces the ṭirāz was controlled by being farmed out to private individuals; this naturally led to great abuses, for the weavers seem to have had a kind of corvée imposed upon them. The sum spent on maintenance (arzāḳ) is very large, amounting to 36,000 dinars per annum. This should be compared with the 10 per cent tax which Abu 'l-Fatḥ Rāzī attempted unsuccessfully to impose upon silk and cotton cloth in Baghdad, estimated to bring in 1,000,000 dirhams—say 100,000 dinars, making the value of annual income 1,000,000 dinars. If wages are considered, this sum seems even more magnificent, for Tanūkhī[31] remarked that a glass cutter who learned grammar from al-Mubarrad (ob. 285 H. [998 A.D.]), a contemporary of the Ibn Furāt brothers, earned a dirham and a third to a dirham and a half a day at his trade. If the workmen of the ṭirāz were slaves, or harem girls, only supplied with provisions in kind, as the term might well imply, the number of people employed there must have been even greater than that calculated on the basis of the glass cutters' wages.

Again, al-Hilāl said:

> The cost of the allowances (waẓā'if) for the private supply magazine (sharāb al-khāṣṣa), and the public supply magazine (sharāb al-'āmma), with the furnishings pertaining thereto, and the expenses of the stores (khazā'in) of clothing (kiswa), the robes of honor (khil'a), perfumes (ṭīb), the requirements for the ablution and the bath, the expenditure on the arsenals (khazā'in al-silāḥ), and those breastplates (djawāshin) and mail-coats (durū') which are worn out, and the arrows (nushshāb), standards ('alam), and spears (miṭrad) made there, and the expenditure on the saddlery stores with the renewals and repairs to them (i.e., the saddles), the expenditure on the carpet stores (khazā'in al-fursh),[32] the cost of the coarse cloth (khaish)of flax, brocades (dubudj), the wages of porters and servants of the throne, etc., as is fully specified in the office of expenditure, (those who spend it and are maintained by it, being in charge of the expenditure of it), is in all three thousand dinars a month, that is to say, a hundred dinars per day.[33]

Ḳalḳashandī also described the organization of the royal wardrobe in Baghdad. After referring to the great library of more than one hundred thousand books which belonged to the caliphs, among the other palace offices he mentioned:

> The khizāna al-kiswa which is really made up of two wardrobes (or stores, khazā'in), one of which is called al-khizāna al-ẓāhira, which we express in our time, as al-khizāna al-kubrā, as it was in ancient times, and that expressed by khizāna al-khāṣṣ which has remained into modern times. There were in it stores of colored brocades (dībādj mulawwan) of various kinds, and royal dabīḳī sharb-cloth (al-sharb al-khāṣṣ al-Dabīḳī), scarlet (siḳlāṭūn) and other kinds of splendid stuffs (ḳumāsh)

[31] Tanūkhī, *Nishwār al-Muḥāḍara, Table Talk of a Mesopotamian Judge,* ed. and trans. by D. S. Margoliouth, Oriental Trans. Fund (London, 1921), text, p. 134, trans., p. 147. See also E. von Zambaur, "Dīnār," *Encycl. Islām* (Leyden-London, 1913–38), I, 975–76; *idem,* "Dirham," *Encycl. Islām,* I, 978–79.

[32] For Fursh al-Khilāfa see Ṭabarī, *op. cit.,* II, 967; Tanūkhī (*op. cit.,* text, p. 149) noticed in the audience chamber of Muṭī' a large yellow caliphal carpet (ṭinfisa khalīfīya) of "khazz wa-raḳm" (striped silk ?). Perhaps "khazz raḳm" should be read.

[33] Al-Hilāl al-Ṣābi', *op. cit.,* p. 16.

which display the glory of empire. To it were brought the royal requisitions (musta'malāt al-khāṣṣ) which are made in the dār al-ṭirāz in Tinnīs and Damietta and Alexandria. In it were cut out the caliphal robes (libās al-khilāfa) which were ordered, and the robes of honor (khil'a), and those given as presents (tashrīf), etc. The second was a place for the preparation of the caliphal robes only and is expressed in our time by ṭashtkhāna. To it was brought the caliphal cloth cut out in the first wardrobe.[34]

In the year 305 H. (917 A.D.), al-Muḳtadir received the Byzantine ambassador in his palace. As he wished to make a great impression on this envoy, a splendid display was arranged there. An Arab author has left a list of the kinds of cloth used there with names indicating the various countries of origin. Though drawn from a variety of sources, they seem mainly to have come from ṭirāz cities:

The number of gold curtains of brocade (dībādj) with magnificent gold embroideries (ṭirāz), with figures of cups (djāmāt), elephants, horses, camels, wild beasts, and birds, and large Baṣinnā, Armenian, Wāsiṭ, and Bahnasā curtains, plain (sādhidj), or with drawings (? or colored, manḳūsh), and Dabīḳī with the ṭirāz which were suspended in the castles of the Commander of the Faithful al-Muḳtadir bi'llāh, consisted of 38,000 curtains, of which the aforementioned gold curtains of brocade made up the number of 12,000. The number of carpets (busuṭ), and strips (ankhākh) of Djahram and Dārābdjird and Dawraḳ in the passages and in the courts, on which the generals and envoys of the emperor of Rūm trod, from the New Public Gate to the presence of al-Muḳtadir bi'llāh, not counting the Ṭabarī and Dabīḳī carpets (anmāṭ) which were under them, in the private rooms and in the assembly rooms, for display, and not to be trodden upon, came to 22,000 pieces.[35]

These stuffs with the designs of elephants were not uncommon for Suyūṭī[36] in 575 H. (1180 A.D.) mentions a coverlet or mantle (duwādj) with the pictures (ṣūra) of elephants upon it. Reath and Sachs[37] show an example of such a design from Khurasan, which also bears a ṭirāz inscription.

The custom of distributing clothing as an annual present to servants in lieu of, or as part of, wages (a system which persisted in Persia until at least before the war of 1914–18), was not confined to the caliphs, but seems to have been general among the great nobles. Al-Ṣāḥib Ismā'īl ibn 'Abbād (ob. 387 H. [997 A.D.]), in one winter, gave to his servants 820 turbans ('amā'im) of khazz-silk: "He liked silk and used to order that there be much of it in his house."[38] His servants wore splendid colored silks. This official, who was vizier to Mu'aiyad al-Dawla, had a storehouse for robes of honor (khizāna al-khila').

An account of the ṭirāz of the Buwaihids is given in 'Utbī[39] in his history of the Ghazne-

[34] Ḳalḳashandī *Ṣubḥ al-A'shā* (Cairo, 1331 H. [1913 A.D.]), III, 476. Page 477 refers to a khizāna al-fursh, called in his day firāsh-khāna.

[35] G. Salmon, *L'Introduction topographique à l'histoire de Bagdâdh d'Aboû Bakr Aḥmad ibn Thâbit al-Khaṭîb al-Bagdâdhī* (Paris, 1904), text, p. 52, trans., p. 135.

[36] Suyūṭī, *Ta'rīkh al-Khulafā'* (Calcutta, 1881), p. 473.

[37] N. A. Reath and E. B. Sachs, *Persian Textiles and Their Technique* .... (New Haven, 1937), Pl. 50. These are probably ṭardwahsh and were also made in Fatimid Egypt. See *infra*, Chapter XVI.

[38] R. A. Nicholson, *Second Reading Book* (Cambridge, 1909), p. 111.

[39] 'Utbī, *Kitāb al-Yamīnī* (Cairo, 1286 H.), pp. 91–93.

vids, entitled *Kitāb al-Yamīnī*. It seems that this Shi'a dynasty had taken over the ṭirāz system, which rightly belonged to the Abbasid caliph, and turned it to their own use. During the internecine quarrels of the Buwaihids, 'Aḍud al-Dawla received at his court one of the officers of the Samanid court, Ahmed Khwārizmī, who had come with demands from his master:

I set before him a memorandum which he ('Utbī, the Samanid vizier, ob. 371 H. [981–82 A.D.]) had given me, with particulars of what I was to bring from Iraq province. Among these were one thousand manufactured garments (thawb), embroidered (muṭarraz) with the ṭirāz, containing the name of the Emir al-Saiyid al-Malik al-Mu'aiyad al-Manṣūr Walī al-Ni'am Abu 'l-Ḳāsim, Nūḥ ibn Manṣūr, the client of the Commander of the Faithful, and five hundred garments embroidered with the name of al-Shaikh al-Saiyid Abu 'l-Ḥusain 'Ubaid Allāh ibn Ahmed, and a like quantity marked (mu'lama) with the name of the noble chamberlain, Abu 'l-'Abbās Tāsh.

This assumption of overlordship annoyed the proud Buwaihid very much, but finally he acceded to his request, and replied to the envoy:

We have ordered the execution of the contents of the memorandum which the sheikh has requested, so as not to put him to any inconvenience, and so as not to alter his attitude of benevolence. The manufacture will take place so that the finishing touches of the artisans, and the execution of your requirements are in time for your return from your destination.

Ahmed Khwārizmī said:

So I asked all those to be made with the aforementioned inscriptions (ṭirāz), and took them with me to Bukhara, crowned with success, along with the other things which were prescribed.

This event took place some time between 365 H. (976 A.D.), when Nūḥ ibn Manṣūr came to the throne, and 371 H. (981–82 A.D.), when 'Utbī died.

Yet more details of the stuffs used at the court of 'Aḍud al-Dawla are given by Miskawaihī:

The Persian New Year approached, and 'Aḍud al-Dawla wanted to have a gown (ḳabā') of scarlet (siḳlāṭūn) cut out for himself to wear. He bade me (said Abū Naṣr) fetch from the store (khizāna), a fabric suitable for a gown. I went there, selected a fine material of the usual sort and brought it to him. When I set it before him he looked at it, then took it up and flung it at me, saying: "That is not the sort I wanted." I supposed that he did not think it good enough, and wanted something superior. So I went back and produced from another locker (bāba) something richer, and brought it to him. When his eyes fell on it he exclaimed, "Blindhearted man, not this." I remained bewildered, not knowing what to do. I returned to the store, where Abū Naṣr Bundār asked me why I looked so perplexed, and why I had taken two fabrics and brought them back. When I explained the situation to him, he laughed, and said, "If you had only told me I should have saved you this perplexity." He rose and opened a case (safaṭ) containing siḳlāṭūn fabrics of ordinary quality, worth five dinars apiece.[40]

[40] Miskawaihī, *The Eclipse of the 'Abbasid Caliphate*, ed. and trans. by H. F. Amedroz and D. S. Margoliouth (Oxford, 1920–21), VI, 67. The following passage of 'Umarī is relevant in the context (*Masālik al-*

'Aḍud al-Dawla accepted this and had it made into a gown and wore it at Nawrūz.

'Aḍud al-Dawla had an overmantle (fardjīya) lined with ermine (ḳ māḳ m). One of his men importuned him to present him with this robe, so that eventually he tore it apart, and gave him the siḳlāṭūn, saying to the stirrup holders:

You know that we have in our possession enough robes of siḳlāṭūn to bestow on the whole army if we chose to do so. But these linings (baṭā'in) of fur are rare, and only a few pieces are brought to us in the year from distant countries outside our dominions.[41]

Under the events of the year 512 H. (1118–19 A.D.), al-Athīr reported:

In this year al-Mustarshid bi'llāh cast out of the royal assignments of fiefs (al-iḳtā' al-mukhtaṣṣ) every injustice, and ordered that only what former custom decreed should be taken, and he abolished the farming (ḍamān) of the weaving of gold (ghazl al-dhahab). The manufacturers of scarlet (siḳlāṭūn) and mumazzadj, and others who manufactured it used to suffer great distress at the hands of the governors over them, and much hardship.[42]

Ḳalḳashandī[43] described the customs of the later caliphs in regard to the robes of honor, and of the appointment of governors and of their investiture:

If the person whom the caliph appointed was one of the kings of the districts far away from the court of the caliph, for example such as the kings of Egypt at that time, and others, the robe of honor (tashrīf) was despatched with a messenger to him from the caliph. It was an upper gown (djubba) of black satin (aṭlas) with a golden ṭirāz border, and a necklace (ṭawḳ) of gold to be placed on his neck, and two bracelets (siwār) of gold, to be placed on his hands . . . and a sword, the scabbard of which was covered with gold, and a horse with a saddle (markab) of gold, and a black standard ('alam) with the name of the caliph written in white, to be unfurled over his head. It was one such as this that was sent to the Sultan Ṣalāḥ al-Dīn Yūsuf ibn Aiyūb (ca. 550 H. [1200 A.D.]), and then his brother, al-'Ādil.

When it reached the sultan of that region, he donned the robe of honor, and the turban ('imāma), girt the sword about him, mounted the horse, and proceeded at the head of his retinue until he came to his palace. According as the circumstances of the occasion required, other robes for the sultan's children, or his vizier, or one of his relatives, were sometimes despatched with the robes of honor.

The same author stated that al-Nāṣir ibn al-Azīz ibn al-Sultan Ṣalāḥ al-Dīn was given a robe of honor (khil'a) by Musta'ṣim in 655 H. (1257 A.D.); he was the last of the Ayyubids to receive this honor.[44]

Abṣār, [partially] trans. by E. M. Quatremère, *Notes et extr. de la Bibl. Nat.,* XIII [1838], 247): "Leur (les Sāmānides) puissance était tellement affermie, que les rois des différentes contrées reconnaissaient leur suprématie. Les princes de la famille de Būya (les Buwaihids) malgré l'étendue de leur empire, se regardaient comme les vasseaux des Sāmānides, leur payaient des tributs, et leur envoyaient des étoffes sur lesquelles étaient brodés les noms de ces souverains ainsi que ceux des principaux fonctionnaires de leur état, tels que le wazīr, le chambellan (ḥādjib)."

[41] Miskawaihī, *op. cit.,* text, III, 73, trans., VI, 74–75. For ḳ māḳ m see Ibn Abī Uṣaibi'a, *op. cit.,* I, 136. It seems to be merely a variant of ḳāḳum, "ermine."

[42] Ibn al-Athīr, *op. cit.,* X, 384.

[43] Ḳalḳashandī, *op. cit.,* III, 276.

[44] *Ibid.,* III, 276.

It has been suggested, earlier in this chapter, that the first ṭirāz factory of Baghdad was in the Round City of Manṣūr as long as the caliphs continued to live there. Now there are two places in Baghdad, the first called dār al-ḳazz, and the second dār al-ḳuṭn—the "House of Silk" and the "House of Cotton"—about which little is known, but either or both of these places may have had some connection with the royal factories (Map 1). All Yāḳūt said is:

> Between it (the dār al-ḳazz) and the country, nowadays, there is about a parasang. All around it has been destroyed, and there remain only four contiguous places—dār al-ḳazz, the 'Attābī Quarter, al-Naṣrīya, and al-Shihārsūk. The rest is composed of large mounds. Paper is made there nowadays.[45]

A writer known as Dār al-Ḳuṭnī[46] was born in 306 H. (918 A.D.).

Definite information as to the site of the ṭirāz factory of the Buwaihid and Seljuk periods is given in the *Manāḳib Baghdād* of Ibn al-Djawzī (510–97 H. [1116–1200 A.D.]). The earliest known ṭirāzī stuffs from Baghdad date from the fourth century, and perhaps one may look for the foundation of this institution then:

> As for its (the Bāb al-Ṭāḳ) streets, one street of those next (or near) to the Tigris, is a ṭirāz street, stretching from al-Djisr (the bridge, i.e., the middle bridge of the Tigris), to the beginning of al-Zāhir, which is a garden of about two hundred djarībs (about twenty acres[47]) belonging to the king. On the other side of it are the mosques of the lords of the castles and the dwellings of their servants, and, in between that, their stables (iṣṭablāt). Then next to it, on the right, at the bridge, is the Sūḳ of Yaḥyā which connects the houses of viziers and emirs, like Dār Shādī, and al-Rabīb, and Ibn al-Awḥad, and Ḳaṣr al-Wāfī (for whose riding animals each day's fodder was a thousand nose-bags), that are next to the bank (al-Shaṭṭ). At the end of this market is Dār Faradj, dwellings of the pious and leaders. On the west side, I mean of the Sūḳ of Yaḥyā, are the large shops (al-dakākin al-'āliya), and the populous streets of the floursellers, bakers, and sellers of sweetmeats. Then at the very end of the houses on the bank (Dūr Shāti'īya) is the palace of Mu'izz al-Dawla with a dam (masanna) of the thickness of a hundred bricks. The palace has the "wonderful window" (al-rawshan al-badī—a glass dome ?), and this is the ṭirāz of the Bāb al-Ṭāḳ al-Shāṭi'. As for its entrances, the beginning of them is the square (al-'Arṣa) which is Raḥba al-Djisr. The latter is divided into two large streets, one of them belonging to the artisans (asākifa). Then comes Sūḳ al-Ṭair.[48]

I have been unable to define the site of this factory with complete certainty, as the topography of this part of the city is itself as yet somewhat vague. According to 'Arīb,[49] al-Rāsibī in 301 H. (913 A.D.) left more than a hundred garments (thawb) of precious ṭāḳī khazz-silk, and this may be named after the Bāb al-Ṭāḳ in Baghdad.

The Baghdad ṭirāz seems to have survived the Mongol invasion, and destruction of the city, for the following anecdote not only indicates its survival but the foundation of a new

[45] Yāḳūt, *Mu'djam al-Buldān, Geographisches Wörterbuch,* ed. F. Wüstenfeld (Leipzig, 1866–73), II, 522. See G. Le Strange, *Baghdad During the Abbasid Caliphate* (Oxford, 1924), pp. 137 and 139. These places were, however, more likely to be bazaars.

[46] *Ibid.,* p. 84. C. Brockelmann, *Geschichte der arabischen Litteratur* (Leyden, 1937), Suppl. I, 275.

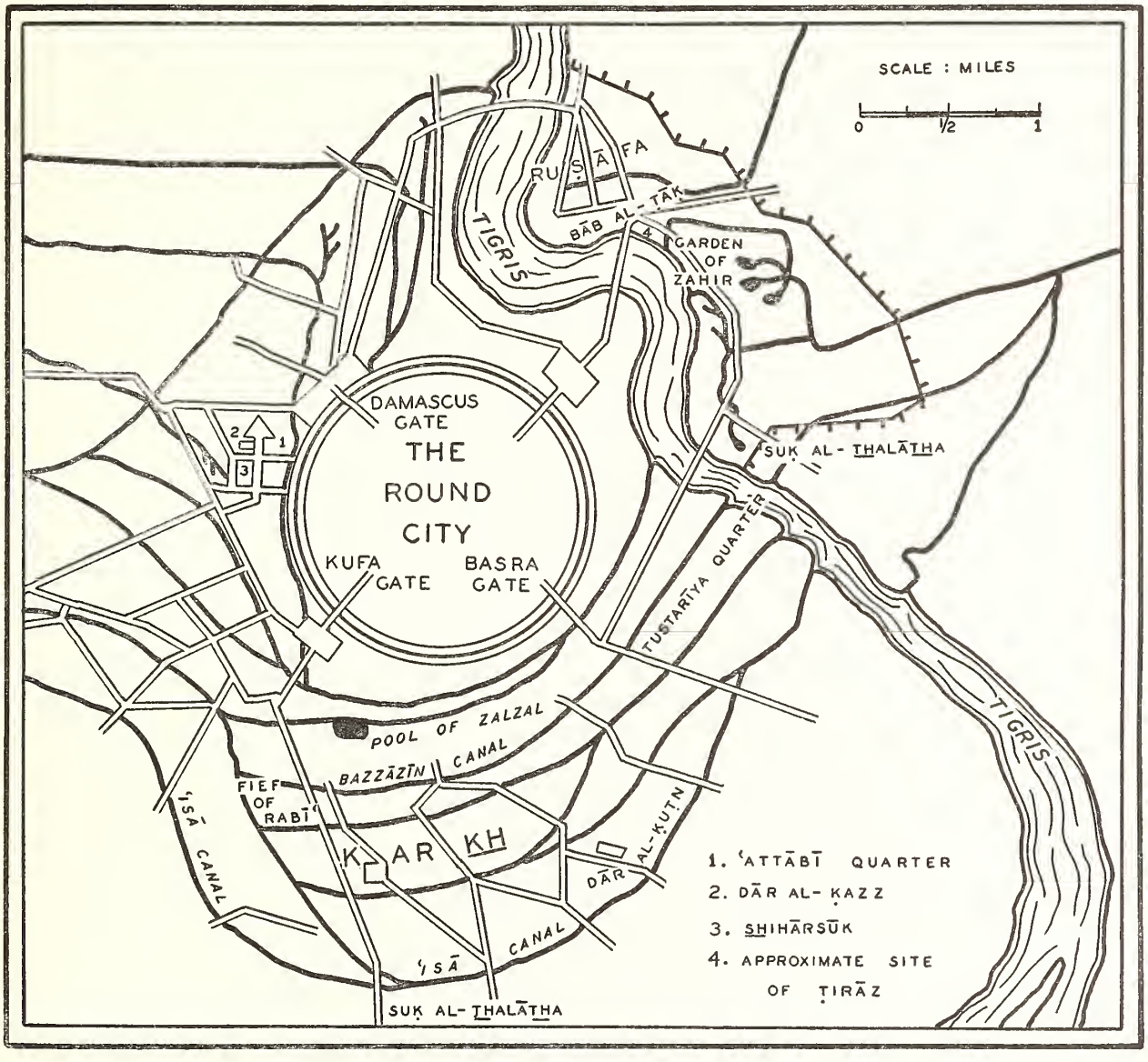
[47] See Le Strange, *op. cit.,* index: "Jarīb."

[48] G. Wiet, *L'Exposition persane de 1931* (Cairo, 1933), p. 6. Ibn al-Djawzī, *Manāḳib Baghdad* (Baghdad, 1342 H. [1923–24 A.D.]), pp. 25–26.

[49] 'Arīb, *Tabari continuatus,* ed. M. J. de Goeje (Leyden, 1897), pp. 44–45.

ṭirāz factory at Sulṭānīya, the Mongol capital. During the year 712 H. (1312 A.D.) D'Ohsson[50] reported:

Dès son retour à Sulṭānīya, il (le Sulṭān) éleva au poste de wazir Tāj al-Dīn ʿAlīshāh. Ce nouveau ministre des finances avait été marchand de bijoux, d'étoffes et d'autres articles. Son commerce l'avait mis en relation avec l'Amīr Ḥusain Gūrkhān et le prince Uljaitū; ils l'introduisirent auprès du Sulṭān auquel il plût: il était spirituel, adroit, souple, insinuant. Le wazir Sa'd al-Dīn, prenant



MAP 1.—Baghdad.

[50] C. d'Ohsson, *Histoire des mongols* (The Hague and Amsterdam, 1834–35), IV, 545–47 (cited by C. Huart in his *Histoire de Bagdad* [Paris, 1901]).

ombrage de la faveur dont il jouissait, lui confia pour l'éloigner, la direction des manufactures royales à Bagdad. 'Alīshāh offrit au Sulṭān lorsqu'il vint dans cette residence, des étoffes magnifiques et de grandes barques ornées somptueusement." . . . [he still further rose in his favor through a singing girl who attracted the attention of the Sultan . . .] "Un jour 'Alīshāh donnant une fête somptueuse au Sulṭān, dans l'hôtel de la manufacture royale de Sulṭānīya, après avoir offert des présents au souverein, à ses courtisans, et aux généraux, posa d'abord trois pièces de riches étoffes devant Rashīd al-Dīn et ensuite un égal nombre devant Sa'd al-Dīn." [The last named showed so much anger at being placed second that he annoyed the sultan.] [51]

Part 2

THE MANUFACTURES OF BAGHDAD

As in the case of the ṭirāz factory, information is also lacking about the textile manufactures of the metropolis of Islam. Because of its central position, Baghdad was exposed to every kind of cultural influence in the Islamic world. Ya'ḳūbī, about 278 H. (891 A.D.), described the cosmopolitan aspect of the city:

There is not a people from any country but has a quarter (maḥalla) in it, a place for the exchange of their produce, and a special district of their own. That which is not to be found in any other town of the world is brought together there. On each side of it flow the two greatest rivers, the Tigris and the Euphrates. By both land and sea, merchandise and provisions come to it by the easiest of routes, so that all merchandise brought from the East and West of the countries of Islam, besides that of other countries, is represented here. So much commerce goes to it from Hind, Sind, China, Tibet, the Turks, Dailam, the Khazars, the Abyssinians, and other countries, that more articles of merchandise are to be found there than in the countries of origin themselves. Withal it is easy of access and approach, so that it seems as if all the goods of the earth were driven towards it, that all the treasures of the world were collected together in it, and that worldly blessings attained perfection there . . . .

You ascend from the Bāb al-Karkh, turning to the right of the fief of Rabī', the client of the Commander of the Faithful, which contains merchants, the merchants of Khurasan, consisting of sellers of cloth (bazzāz), and the various kinds of garments brought from Khurasan, sold by themselves, not along with anything else.[52]

[51] *Ibid.* Additional Notes: Ḳalḳashandī gives a very full description of other insignia of the caliphs and of the Mameluke sultans, including the raḳaba (*Ṣubḥ*, II, 128), a cloth of yellow silk embroidered with gold, for covering the sultan's horse (see Dozy, *op. cit.*), and standards (*Ṣubḥ*, IV, 8), the ghāshīya (*ibid.*, IV, 7), the miẓalla or čatr, umbrella (*ibid.*), which is also described by Chau Ju-Kua (*Chu-fan-chih, on the Arab and Chinese Trade in the Twelfth and Thirteenth Centuries*, trans. by F. Hirth and W. W. Rockhill [St. Petersburg, 1911], I, 135) in the twelfth to thirteenth century and by whom the miẓalla is also described as an umbrella with differences in minor details.

More information about the Mameluke ṭirāz is to be found in the *Ṣubḥ*, in the following places: III, 278–81, 498; IV, 6 and 55. Quatremère (in his translation of the *Histoire des sultans mamlouks de l'Égypte*) has also some interesting details, and, of course, Maḳrīzī supplies a great deal of information from the *Khiṭaṭ*. These, however, lie outside the early period, which is being discussed here, and, indeed, would involve more research than time permits, for the post-Mongol period is very well documented.

[52] Ya'ḳūbī, *Kitāb al-Boldān, Bibliotheca Geographorum Arabicorum* (=*B.G.A.*) (Leyden, 1892), VII, 234 and 245.

Similar passages are to be found in other authors, especially Ibn al-Faḳīh,[53] who noted in particular, that "they have white Merv garments, and nobody else can share in the excellence of their manufacture." This passage probably refers to a type of cotton cloth, and not to any distinctive Mervian cloth which had come to Baghdad.

Abū'l-Ḳāsim[54] spoke of 'Attābī Dabīḳī with a gold-embroidered border (mu'lam muthaḳ-ḳal). It is rather hard to say what this material was, but since the Dabīḳī cloth was, of course, the kind made in the Tinnīs-Damietta group, a linen cloth with a ṭirāz border, though there were also silken kinds, this is perhaps one of the types resembling Dabīḳī, but manufactured in the 'Attābī quarter of Baghdad. The *Tuḥfa al-Albāb* of Gharnāṭī gives some indication of the nature of this 'Attābī:

> In the land of the Zandj (Negroes) there are donkeys, each of which is similar to the stuff 'Attābī—a striped cloth (mukhaṭṭaṭ) with black and white in regular stripes (khuṭūṭ). It has a more lovely black and white than ibrīsm-silk in the 'Attābī of Baghdad and Khurasan. There was an ass of this kind at Cairo, but it is dead. Its skin has been kept and stuffed with cotton and it is brought out on festival days. It is one of the marvels of the world.[55]

Apparently, the 'Attābī which he knew (473–565 H. [1080–1169–70 A.D.]) was a silky cloth resembling the coat of a zebra.

Al-Ṣūlī[56] in the events of the year 323 H. (935 A.D.) recounted that "a great fire occurred in Karkh in Shawwāl which burnt the perfumer's quarter, the quarters of the chemists, the makers of glazed ware (or painters, aṣḥāb al-madhūn), the silkmakers (khazzāzūn), and the jewelers (djawharīyūn)."

How far the Baghdad products traveled even in the early centuries of Islam is evident from the list of presents given to a Spanish ruler in 327 H. (939 A.D.). The list contains the items "Baghdad cloths (malāḥif)," silk, and gold,[57] for the adornment of horses.

The *Ḥudūd al-'Ālam*[58] notes that "Baghdad produces cotton stuffs, silk textiles, crystals turned on a lathe, and glazed ware (jāma-yi-pamba va abrīshum)." Maḳdisī [59] stated that "in the City of Peace (Baghdad) rare articles of merchandise are to be found as well as all kinds of silken cloth (ḳazz) and other things." Among the products for which Iraq was specially famous he numbers the "muḥkam (glass?) and other rarities of Baghdad. . . . and at Baghdad, izārs (trousers for men, or veils for women which cover the whole body), turbans ('imāma), and the valuable Yakānakī[60] cloth are made." It is worthy of remark that this

[53] Ibn al-Faḳīh, *Compendium libri Kitāb al-Boldān*, ed. M. J. de Goeje, *B.G.A.* (Leyden, 1885), V, 252.

[54] Abu'l-Muṭahhar al-Azdī, *op. cit.*, p. 35.

[55] [Gharnāṭī], G. Ferrand, "Le *Tuḥfat al-Albāb* de Abū Ḥāmid al-Andalusī al-Gharnāṭī," *Journ. asiatique*, CCVII (1925), 110 of the text.

[56] Al-Ṣūlī, *Akhbār al-Rāḍī wa'l-Muttaḳī, from the Kitāb al-Awrāḳ*, ed. J. Heyworthe-Dunne (London, 1935), p. 68.

[57] Maḳḳarī, *Analectes sur l'histoire et la littérature des arabes en Espagne*, ed. R. Dozy and others (Leyden, 1855–61), I, 229–31. See Chapter XVII of this work on Spanish textiles.

[58] *Ḥudūd al-'Ālam*, trans. by V. Minorsky, Gibb Mem. Ser. (London, 1937), n.s., XI, 138.

[59] Maḳdisī, *Descriptio imperii Moslemici*, *B.G.A.* (Leyden, 1876; 2d ed. 1906), III, 128.

[60] Persian Yagānagī, "smooth or precious cloth." (?) Gloss. in *B.G.A.*

Persian cloth is also to be found in Baghdad along with such other types of foreign cloth as Dabīḳī from Egypt.

Miskawaihī stated:

[In 375 H. (985–86 A.D.)] Ṣamṣām al-Dawla proposed to impose a duty of 10 per cent on the price of silken and cotton cloths manufactured in Baghdad .... Abu 'l-Fatḥ Rāzī had represented the amount to be got from this duty as very large, and offered to procure a million dirhams thence every year. There was a meeting held in the mosque of Manṣūr, and they decided to prevent the Friday worship, while there were riots in other cities. They were, in consequence, relieved of the new impost.[61]

The government, however, did succeed in placing this tax on the recalcitrant population, for Miskawaihī, under the annals for the year 349 H. (999 A.D.), reported:

Abū Naṣr Sābūr had endeavored to impose a tithe on all silken and cotton goods (thiyāb ibrīsmīyāt wa-ḳuṭnīyāt) manufactured in Baghdad. This caused a riot on the part of the people of the 'Attābī quarter, and of the Damascus Gate, who proceeded to the public mosque on Friday the tenth, stopped the sermon and prayer, clamored and appealed, and went into the streets in this style. On Tuesday they proceeded to the palace of Abū Naṣr Sābūr in Daizadj Street whence they were kept out by the young 'Alawids. Leaving Daizadj Street, they went to the Tigris .... It was arranged (in consequence of the riot) that the tithe should be taken from the price of the silken goods only (silk being forbidden to men by religious law), and to that effect a proclamation was made on Sunday, the fourth of Djumādā I. (April 23, 999), on the western side, and on the following Monday, on the eastern side. This tax was maintained, officers and an inspector appointed for its collection, and an office set apart for this purpose in a palace on the Pool (probably the Pool of Zalzal;[62] stamps (khutūm) were placed on all goods from the looms (manāsidj), and sold and sealed.

This practice was retained until the last days of 'Amīd al-Djuyūsh, who abolished it and put a stop to the custom.[63]

Another account of the same is given by al-Hilāl al-Ṣābi' in his *Kitāb al-Wuzarā'*, but instead of the phrase "sold and sealed" he has "sold and made red."[64]

In the reign of 'Aḍud al-Dawla, Tha'ālibī counted the scarlet (siḳlāṭūn) of Baghdad as a choice article of clothing[65] and reported that "as regards striped cloaks, 'Attābī stuffs, and scarlets, Baghdad and Isfahan share in them."[66] Both Gharnāṭī,[67] and Nuwairī[68] mentioned the siḳlāṭūn of Baghdad as among the especially fine articles of clothing.

Ibn Djubair[69] (580 H. [1184 A.D.]) added: "One of the names of the quarters (of Baghdad) is 'Attābīya; the 'Attābī garments which are of silk (ḥarīr) and cotton of various colors are made there."

Chau Ju-Kua, the Chinese author of the twelfth to the thirteenth century, numbered

[61] Miskawaihī, *op. cit.*, VI, 119–20. Cf. Suyūṭī, *op. cit.*, trans. by Jarrett, p. 429.

[62] See Le Strange, *op. cit.*

[63] Miskawaihī, *op. cit.*, VI, 361.

[64] Al-Hilāl al-Ṣābi', *op. cit.*, p. 368.

[65] Tha'ālibī, *Laṭā'if al-Ma'ārif*, ed. P. de Jong (Leyden, 1867), p. 132.

[66] Tha'ālibī, *Thimār al-Ḳulūb* (Cairo, 1326 H. [1908 A.D.]), p. 429.

[67] Ferrand, *op. cit.*, p. 211.

[68] Nuwairī, *Nihāyat al-Arab fī Funūn al-Adab* (Cairo, 1923–37), I, 356. Nuwairī died in 1332 A.D.

[69] *The Travels of Ibn Jubair*, ed. W. Wright and M. J. de Goeje, Gibb Mem. Ser. (Leyden-London, 1907), V, 226.

"white cloth (yüe-no)" among the products of Baghdad, and again "opaque glass, coral, native gold (or gold bullion), brocades (or kincobs), sarcenets, cornelian, and pearls."[70] This kind of cloth he also remarked was to be found at Ghazni (Ki-tz ï-ni).[71]

Yāḳūt[72] has some notes on the cloth manufacturing centers in the city. He mentioned Dabīḳīya, on the 'Isā canal, as one of those quarters, and this must have been where the supplies of that material were made for the consumption of Baghdad. If the evidence of Maḳrīzī is reliable, the import figure for the annual supply from Egypt is really very low for the province of Iraq,[73] amounting to between 20,000 and 30,000 dinars per annum, until 360 H. (970 A.D.) at least. It may be after this date that weavers from Egypt migrated to Baghdad to be freed of the restrictions placed on the industry by the government, and to set up factories in Baghdad. They were not the only people to give their name to a quarter of the city where textiles were manufactured, for Yāḳūt[74] also mentioned the Tustarīya Quarter, on the west side between the Tigris and Bāb al-Baṣra, where the people of Tustar used to live—"and Tustarī garments are made there." As Abu 'l-Ḳāsim Hibat Allāh ibn Ahmed al-Ḥarīrī al-Tustarī and another also with the name of al-Ḥarīrī were called Tustarī because they lived in this part of Baghdad, one may deduce that silk must have been handled there, and probably all the other Tustar fabrics. Khuzistan early exerted an influence on Baghdad, for Ṭabarī[75] mentioned a certain Abu Aiyūb al-Khūzī (of Khuzistan), who made tents of a certain stuff for Manṣūr, suggesting that this man had migrated to Baghdad, possibly into royal service.

In the later days of the caliphate, the trade in cloth migrated from the west side of Baghdad to the east side. Yāḳūt[76] said: "Suḳ al-Thalātha is the most populous market in Baghdad, because the market of the clothmakers (Sūḳ al-Bazzāzīn) is there." After the Mongol conquest, Abu 'l-Fidā'[77] stated that "Sūḳ al-Thalātha (Tuesday market) on the east bank of the Tigris later became the place where most clothmakers were established." As he followed mostly pre-Mongol sources, this doubtless refers to the latter period of the Abbasid era.

The Chinese translation of Yüan ch'ao pi shi gives a list of articles sent from Baghdad to Ogotai Khan (first half of the thirteenth century), which agrees well with the list of manufactures in Baghdad mentioned by Marco Polo:

Shiramala	(?)
Nakhut	(a kind of gold brocade) Arabic nakhkh
Nachidut	(a silk stuff interwoven with gold) Arabic nasīdj
Dardas	(a stuff embroidered with gold)
Subut	(pearls)
Tanas	(great pearls)[78]

[70] Chau Ju-Kua, *op. cit.*, I, 135 and 103.

[71] *Ibid.*, I, 138.

[72] Yāḳūt, *op. cit.*, II, 548. A certain Abu 'l-'Abbās al-Dabīḳī al-Bazzāz al-Baghdādi came from this quarter.

[73] See Chapter XV.

[74] Yāḳūt, *op. cit.*, I, 850.

[75] Ṭabarī, *op. cit.*, ser. III, I, 417–18.

[76] Yāḳūt, *op. cit.*, I, 932. See also Yāḳūt on dār al-ḳazz in the first part of this chapter.

[77] Abu 'l-Fidā', *Taḳwīm al-Buldān*, ed. T. Reinaud and M. de Slane (Paris, 1840), II, 69, following the Mushtarik.

[78] E. Bretschneider, *Mediaeval Researches from Eastern Asiatic Sources* (London, 1910), II, 124.

Marco Polo[79] said: "In Baudas (Baghdad) they weave many different kinds of silk stuffs and gold brocades such as nasich (nasīdj), and nac (nakhkh), and cramoisy (ḳirmizī), and many another tissue richly wrought with figures of beasts and birds." This seems to be a kind of ṭardwaḥsh. Another text adds: "Almost all the pearls that are brought from India to Christian countries are pierced in Baghdad."[80]

Still later Ibn Baṭūṭa (756 H. [1355 A.D.]) at Smyrna[81] was given two garments of a stuff called kamkhā: "It is a silk stuff (ḥarīr) made at Baghdad, Tabriz, Nishapur, and in China." These three cities were important under the Mongols, and they may have had something to do with the spread of the manufacture of this stuff from China, though that kind of material was not unknown to the Muslims before the conquest.

'Umarī remarked that the cotton and linen of Tunis are more perfect and more beautiful than the Naṣāfī (a white silk stuff) of Baghdad,[82] during the first half of the fourteenth century.

Very much later Pedro Teixeira[83] wrote that "there is produced in the environs (of Baghdad) much cotton and silk; all wrought up and used in the city, where there are more than four thousand weavers of wool, flax, cotton, and silk, who are never out of work."

The Jewish population of Baghdad was very large, and Benjamin of Tudela [84] spoke of a population of 40,000 Jews, and, though there is some doubt as to the figure, there were twenty-eight synagogues there. The professions of the Jews are not specified.

Ruṣāfa

Perhaps it was in Baghdad, in the district of al-Ruṣāfa, that the caps called Ruṣāfīya—a kind of headdress of the type known as "ḳalansuwa"—were made. Ibn Khalliḳān mentioned one of those caps when talking of Dja'far the Barmecide[85] and, according to Miskawaihī,[86] the Caliph Ṭā'i' wore a black turban of Ruṣāfa (375 H. [985–86 A.D.]). It is, of course, possible that they were named after Ruṣāfa in Syria.

[79] *The Book of Ser Marco Polo the Venetian,* trans. and annotated by H. Yule (London, 1875), I, 65.

[80] *The Travels of Marco Polo,* trans. by A. Ricci (London, 1931), p. 25.

[81] *Voyages d' Ibn Batoutah,* ed. and trans. by C. Defrémery and B. R. Sanguinetti (Paris, 1853–59), II, 311. Cf. Tha'ālibī, *Laṭā'if al-Ma'ārif,* p. 127. Ṭabarī (*op. cit.,* ser. III, II, 1169) quoted a poet of the Zuṭṭ describing his people as wearing Kamakhān of China (220 H. [835 A.D.]).

[82] 'Umarī, "I, L'Afrique, moins l'Égypte," *Masālik el abṣār fi mamālik el amṣār,* trans. by G. Demombynes (Paris, 1927), p. 111.

[83] *The Travels of P. Teixeira with His "Kings of Harmuz,"* trans. and annotated by W. F. Sinclair, further notes by D. Ferguson (London, 1902), p. 67.

[84] *The Itinerary of Benjamin of Tudela,* ed. and trans. by M. N. Adler (London, 1907), p. 39.

[85] *Ibn Khallikan's Biographical Dictionary,* trans. by M. de Slane (Paris-London, 1843–71), I, 303.

[86] Miskawaihī, *op. cit.,* text, III, 123. Cf. also Ṭabarī, *op. cit.,* ser. III, 1368, and *Fragmenta historicorum arabicorum,* ed. P. De Jong and R. Dozy (Leyden, 1860), I, 31.

CHAPTER III

THE MANUFACTURES OF IRAQ AND JAZIRA

THE LIST OF LOCAL PRODUCTS BROUGHT WITH THE TAX TO BAGHDAD IN THE TIME OF Ma'mūn[1] includes the very curious item of "two hundred Nadjrānī cloaks (ḥulla)." Baiḍāwī [2] described these as red cloaks, and they were sent in tribute to the early Muslims down to the time of Rashid. It was probably the Sawād of Iraq, though it might have been the Sawād, or surrounding district, of Baghdad that supplied these cloaks. The term Nadjrānī is difficult to explain, but Nadjrān in Arabia was part of Yemen, a province famous for its mantles, and so there may have been some similarity between these two manufactures.

Like Baghdad, the city of Kufa was an Arab foundation and grew to prominence very rapidly, gradually absorbing the populations of the neighboring Ḥīra and Ḳādisīya. Though of prime importance as a center of industry, and a center, doubtless, where the distinctively Islamic style was formed by the fusion of other elements, very little is known about it (Map 2).

Djāḥiz[3] reported that the best kind of figured stuff (washī) is the Sābirī, and the Kufan, and the ibrīsm-silk kind, the woven-gold kind (al-mudhahhab al-mansūdj), and then the Alexandrine kind of pure linen (kattān) which is woven with gold (mansūdj bi-dhahab); the *Kitāb al-Muwashshā*[4] mentions Kufan silks (khazz) among the garments worn by the fashionable. Ibn al-Faḳīh[5] stated that it has special manufactures of washī-silk and khazz-silk, while Ibn Ḥawḳal[6] found that its qualities closely resembled those of Basra. Maḳdisi[7] said that the turbans ('imāma) of khazz-silk made in Kufa are one of the specialties of Iraq, and that even the Sūsī turbans cannot equal the soft thin stuff (sakb) of Kufa.[8]

There is some uncertainty as to the meaning of the term Sābirī, which is discussed by the editor of Djāḥiz:

> It is derived from Sābūr. In the tradition of Ḥabīb ibn Abī Thābit, it says: "I saw Ibn 'Abbās wearing a Sābirī garment (thawb) which was transparent. They call any fine thing Sābirī, its origin being in the Sābirī breastplates (durū')." The *Tādj* says: "Sābirī is a very fine robe." Dhū Rumma said:
>
> "She brought a spider's web, resembling the loose-woven Sābirī on her limbs (Sābirī mushabraḳ)." [9]

[1] See the list from the *Djirāb al-Dawla*, quoted on p. 63.

[2] Baiḍāwī, *Tafsīr* (Cairo, 1306 H.), II, 22 (commentary on Sura III, verse 54).

[3] Djāḥiz, "Al-Tabaṣṣur bi 'l-Tidjāra," *Revue de l'acad. arabe de Damas*, XII (1351 H. [1932 A.D.]), 334.

[4] Al-Washshā', *Kitāb al-Muwashsha*, ed R. E. Brünnow (Leyden, 1886), p. 124. Cf. *Aghānī*, V, 294: Five chests of Kufan washī.

[5] Ibn al-Faḳīh, *Compendium libri Kitāb al-Boldān, B.G.A.* (Leyden, 1885), V, 50 and 252.

[6] Ibn Ḥawḳal, *Opus Geographicum*, ed. J. H. Kramers (2d ed.; Leyden, 1938–39), p. 239.

[7] Maḳdisī, *Descriptio imperii Moslemici, B.G.A.* (Leyden, 1906), III, 128.

[8] *Ibid.*, p. 416.

[9] Djāḥiz, *op. cit.*, pp. 334–35.

Tha'ālibī,[10] however, derives the name from Nishapur. I think this Sābirī stuff, despite what the other authors have said, may have come from Bīshāpūr in Fars rather than from Nishapur, because that city was mostly ruined in Maḳdisī's and Tha'ālibī's time and may have been almost unknown to the latter. Washī is not given as one of the products of Nishapur. It is known that there was an important ṭirāz in Bīshāpūr, but no author has paid much attention to its products, though inscribed ṭirāzī textiles from that place are known to archaeologists.

Mas'ūdī[11] stated that Narsī stuffs (thiyāb) were made along the canal of Nars, which had existed from Sasanian times. Yāḳūt,[12] too, knew that "people and Narsī stuffs are called after it." Again, when discussing Abū Muslim, Mas'ūdī[13] said: "He was one of the people of Burs and al-Djāmi'ān (Ḥilla) of the village called Khartīnīya, with which Bursī garments are connected, known as Khartīnīya. It is one of the districts of Kufa and its Sawād."

Of two other cities, Maḳdisī[14] added: "The handkerchiefs (manādīl) of al-Ḳaṣr and al-Buwaib are among the specialties of Iraq."

The district of Maisān in southeastern Iraq is famous for the type of cloth which derives its name from that locality. Even in pre-Islamic times, if one can trust Azraḳī's sources, it supplied the Arabs with precious stuffs, for he said that the mother of Zaid ibn Thābit saw on the Kaaba, when the prophet was there, "various coverings of striped Yemen stuffs (waṣā'il), carpets (anṭā'), stuffs called kurr (pl. kirār), silk (khazz), and Iraqi carpets (namāriḳ), that is to say Maisānī."[15] Djāḥiz stated:

> From Maisān come carpets (anmāṭ) and cushions (wasīda) and[16] the best and most expensive carpetings (fursh) include, after the Armenian and khusrawānī Rūmī (literally the Roman, i.e., Byzantine, kingly [of Chosroeic] type, possibly the manufactures of Khuzistan being intended), of brocade, khazz-silk brocaded (mudabbadj) in the Maisānī fashion.[17]

Neither Armenian nor Maisānī fabrics were ever interwoven with gold. Abu 'l-Ḳāsim[18] cited the velvets of the Sawād (ḳuṭuf Sawādīya) as a typical furnishing of the houses of Isfahan.

Ibn Rusta (290 H. [903 A.D.]) said of Djabbul: "It is one of the towns of Maisān where Maisānī garments are made."[19] He added that the sultan had a kitchen (ṭabīkh) there, and

[10] Tha'ālibī, *Thimār al-Ḳulūb* (Cairo, 1326 H. [1908 A.D.]), p. 429. Muhammad Murtaḍā al-Zabīdī, *Tādj al-'Arūs* (Cairo, 1307 H. [1888–90 A.D.]), III, 253. Ibn Sa'd, *Biographien Muhammeds, seiner Gefährten, und der späteren Träger des Islams bis zum Jahre 230 der Flucht*, ed. E. Sachau and others (Leyden, 1904–21), VI, 231, for a Sābirī turban. See Djarīr and Farazdaḳ, *Naḳā'id*, ed. A. A. Bevan (Leyden, 1905–09), Index.

[11] Mas'ūdī, *Murūdj al-Dhahab, Les Prairies d'or* (Paris, 1861–77), II, 115.

[12] Yāḳūt, *Mu'djam al-Buldān, Geographisches Wörterbuch* (Leipzig, 1866–73), IV, 773.

[13] Mas'ūdī, *op. cit.*, VI, 59. Possibly this should be read Nars though the name is found in Yāḳūt.

[14] Maḳdisī, *op. cit.*, p. 128.

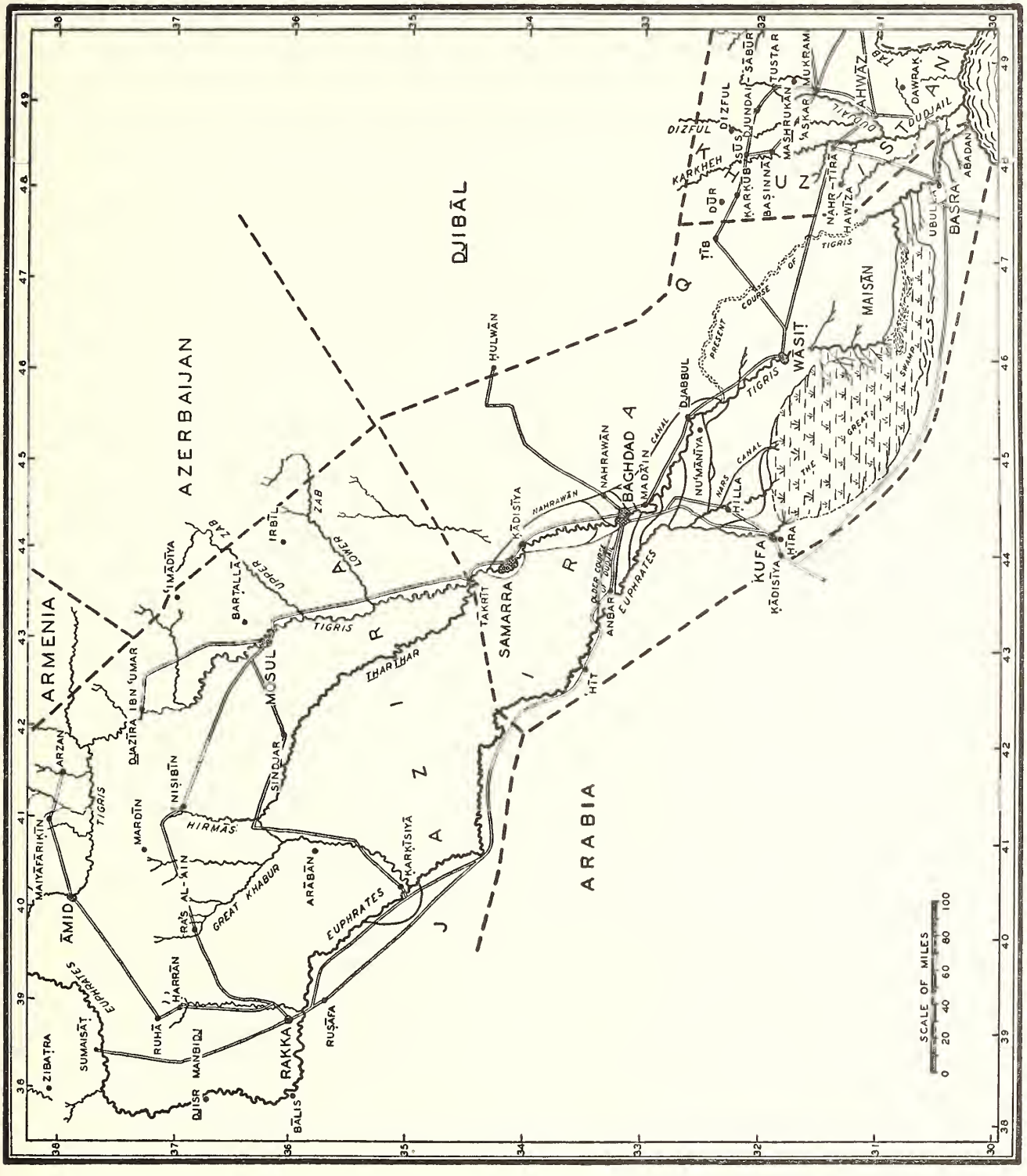
[15] Azraḳī in *Die Chroniken der Stadt Mekka*, ed. F. Wüstenfeld (Leipzig, 1857–61), I, 174.

[16] Djāḥiz, *op. cit.*, p. 336.

[17] *Ibid.*, p. 346.

[18] Abu 'l-Muṭahhar al-Azdī, *Hikāyat Abi 'l-Ḳāsim* (Heidelberg, 1902), p. 37.

[19] Ibn Rusta, *Kitāb al-A'lāḳ al-Nafīsa*, ed. M. J. de Goeje, *B.G.A.* (Leyden, 1892), III, 186–87.



MAP 2.—Jazira and Iraq.

for this perhaps one should read ṭirāz, but this emendation is purely conjectural and has no support whatsoever. Ibn al-Faḳīh reported:

The people of the Tigris district (Kūra Didjla) and the Sawād, Maisān, and Dast Maisān have the manufacture of curtains (sutūr), carpets (busuṭ), and the other makes of Maisānī, silk (ḥarīr), darānik-carpets, dūrank (bi-colored) carpets, and other kinds of furnishings and carpets (fursh wa-busuṭ) which are not to be found elsewhere.[20]

These durnūk-carpets are said by Djawālīḳī[21] to be a kind of ṭinfisa-carpet (a word which, according to Mez,[22] is derived from Greek) and bisāṭ (large carpet), but he remarked that others described them as curtains (sutūr) and large carpets (furūsh) with yellow and green color in them. Some said they had a short pile (khaml ḳaṣīr) like the pile of towels (khaml al-manādīl). The hair of the camel (farwa al-ba'īr) has been compared to them. These carpets, compared with other types, figure very little in Arabic and Persian literature.

Ibn 'Abd Rabbihi[23] included Maisān in a list of cities famous for their manufactures of stuffs, most of the others being ṭirāz cities, while in the *Laṭā'if al-Ma'ārif*[24] the carpets (miṭraḥ) of Maisān are mentioned as articles de luxe about the time of 'Aḍud al-Dawla. These same Maisān carpets (miṭraḥ) are also cited by Nuwairī[25] as being of a very choice kind.

Very near the border of Khuzistan, Ṭīb was especially renowned for making trousercords (tikka) and other materials. Iṣṭakhrī[26] stated: "In Ṭīb trousercords resembling the Armenian kind are made. There are few better made in any Islamic country than those, except Armenia, so far as I know." Another manuscript adds: ". . . . except what has been introduced in Ṭūs, and they make there a kind that is better than the Ṭīb kind." This statement is not reproduced in Ibn Ḥawḳal,[27] who said:

In Ṭīb trousercords are made resembling the Armenian kind. Rarely is there found in any place of Islam after Armenia, better or more splendid ones than these. Although those made in Salmās[28] are of the same kind, they do not fetch anything like their price nor approach anywhere near them in beauty. It is a middling and pleasant city with robes (aksiya) and camelots (barrakānāt).[29]

The first authority to mention these trouserbands who has come to my notice is the anonymous writer of the *Ḥudūd al-'Ālam*, so possibly this manufacture was introduced into

[20] Ibn al-Faḳīh, *op. cit.*, p. 253.

[21] Djawālīḳī, *Kitāb al-Mu'arrab*, ed. E. Sachau (Leipzig, 1867), p. 68.

[22] A. Mez, *The Renaissance of Islam*, trans. by Salahuddin Khuda Bukhsh and D. S. Margoliouth (London, 1937). Because of the printing many references in this work are inaccurate.

[23] Ibn 'Abd Rabbihi, *Al-'Iḳd al-Farīd* (Cairo, 1331 H. [1913 A.D.]), IV, 267.

[24] Tha'ālibī, *Laṭā'if al-Ma'ārif*, ed. P. de Jong (Leyden, 1867), p. 132.

[25] Nuwairī, *Nihāyat al-Arab fī Funūn al-Adab* (Cairo, 1923–27), I, 356.

[26] Iṣṭakhrī, *Viae regnorum . . .*, ed. M. J. de Goeje, *B.G.A.* (Leyden, 1870), I, 94.

[27] Ibn Ḥawḳal, *op. cit.*, p. 176.

[28] Reading Salmās with the extract quoted by the editor of the "Tabaṣṣur bi 'l-Tidjāra," p. 438. The *B.G.A.* has Sidjilmāsa, which is improbable.

[29] Abu 'l-Muṭahhar al-Azdī (*op. cit.*, p. 8) wrote of "the beauty of the ṭirāz-border of his barrakān." Cf. also Chapter IV (Khuzistan).

Ṭūs between the time of Iṣṭakhrī (340 H. [951 A.D.]) and the authorship of the *Ḥudūd al-'Ālam* (372 H. [982 A.D.]). This work also says: "Ṭīb produces very good trousercords just like the Armenian."[30] Idrīsī added: "They make trousercords similar to those made in Armenia, which are superior to all those made in Muslim countries, and black mantles (barrakānāt) the price of which is very high."[31]

Wāsiṭ was founded by the Arabs in 83 H. (702 A.D.), and from the list of stuffs made there, one sees that the influence of the Khuzistan group was the more prominent cultural element there. Djāḥiz[32] declared that the best crimson (ḳirmiz) is dyed in certain places of the land of Wāsiṭ. The Wāsiṭ curtains displayed by al-Muḳtadir bi'llāh in 305 H. (917 A.D.) for the visit of the Byzantine embassy have already been mentioned.[33] According to the *Ḥudūd al-'Ālam,* "Wāsiṭ exports gilīms, trousercords, and dyed wool."[34] Maḳdisī numbered curtains (sutūr) of Wāsiṭ among the products of Iraq,[35] and further added: "In Wāsiṭ curtains are made with 'mimmā 'umila bi-Baṣinnā' written on them, which are exported as coming from that place, but they are not like them."[36]

Ḥīra declined in Islamic times, probably because of the fact that, according to Idrīsī,[37] the population of Ḥīra and Ḳādisīya had migrated to Kufa, leaving the older cities smaller in size. Ibn Baṭūṭa[38] spoke of brocade (dībādj), silk (ḥarīr), and figured washī-stuff as existing in Ḥīra in pre-Islamic times, but these stories seem legendary. The weavers in Ḥīra were mainly Christians. Of Nu'mānīya, Ibn Rusta[39] said: "Ḥīra carpets (ṭinfisa) are made there, it being one of the towns of Ḥīra." Maḳdisi,[40] too, noted: "At al-Nu'mānīya beautiful robes (aksiya) and garments (thiyāb) of honey-colored wool are made."

The cosmopolitan city of Basra was settled with many races, and Balādhurī[41] even stated that Bukharans were settled in it by various governors, as also in Wāsiṭ. If one is to believe the boast of the ambassador to 'Abd al-Malik (64–73 H. [683–92 A.D.]), it was early famous for its textile manufactures:

Madā'inī said: "Khālid ibn Ṣafwān came on an embassy to 'Abd al-Malik ibn Marwān, and met, at his court, embassies from all the provinces. Now Maslama had made factories (maṣāni') for him ('Abd al-Malik), and he asked 'Abd al-Malik to allow the embassies to go with him to those factories. Permission was granted. When Maslama inspected them, he was pleased with them, and, turning to the Meccans, he said: "Oh people of Mecca, have you any factories like this?" "No," they replied, "but we have the house of God which is used as the kiblah." . . . Maslama then asks each of the embassies in turn if they have such fine factories as his, till eventually he comes to the Basran envoy,

[30] *Ḥudūd al-'Ālam,* trans. by V. Minorsky, Gibb. Mem. Ser. (London, 1937), n.s., XI, 130.

[31] Idrīsī, *Géographie,* trans. by P. A. Jaubert (Paris, 1836–40), I, 384.

[32] Djāḥiz, *op. cit.,* p. 339.

[33] See p. 75.

[34] *Ḥudūd al-'Ālam,* p. 138.

[35] Maḳdisī, *op. cit.,* p. 129.

[36] *Ibid.,* p. 416 "manufacture of Baṣinnā."

[37] Idrīsī, *op. cit.,* I, 366.

[38] *Voyages d' Ibn Batoutah,* ed. and trans. by C. Defrémery and B. R. Sanguinetti (Paris, 1853–59), III, 209.

[39] Ibn Rusta, *op. cit.,* p. 186.

[40] Maḳdisī, *op. cit.,* p. 128.

[41] Balādhurī, *Futūḥ al-Buldān,* trans. by P. Hitti (New York, 1916), index under Wāsiṭ.

who replies: "We are the people who have the most ivory (ʿādj), ebony (sādj), silk (khazz), and brocade (dībādj)."[42]

Ibn al-Faḳīh,[43] earlier than Yāḳūt quoted this phrase as having been coined in the time of Hishām, and this doubtless is the more correct version, for Maslama was the adviser to the Umayyad dynasty until the reign of this latter monarch.

The *Ḥudūd*[44] says: "Basra produces cloths (fūṭa) as well as linen and cotton stuff of high quality (djāmā-hā-yi-katān-va khīsh-i-murtafiʿ)." Maḳdisī[45] cited Djāḥiz as quoting the "manufacture (ṣanāʿa) at Basra" as one of the remarkable things for which it is famous above all other cities, and added:

> Have you not heard of the silken stuffs (khazz) of Basra, and its cloth (bazz), of the rare and outstanding wares in it? For it is a mine of pearls and jewels, a port of the sea, and an emporium of the land, and a place for the manufacture of cinnabar (rāsukht), red lead (zindjafr), and proto-oxide of lead (murdāsandj). From it dates and henna are exported to all countries. They have silk (khazz), violets, and rosewater.[46]

Nāṣir-i-Khusraw[47] stated that Laḥsā weaves cloths (fūṭa) which it exports to Basra and other countries. Benjamin of Tudela[48] reported that Basra had many Jews, as one might expect in so commercial a city.

Ibn Ḳutaiba (213–*ca.* 276 H. [828–*ca.* 889 A.D.]) gave a hint at the fashion of stuffs those silks were: "Abū Ḥātim said: 'Al-ʿUtbī relates: "I have seen at Basra cloaks (burūd) sewn with the blossoms of Spring which caught the eye, and those who wore them were still more striking." ' "[49] The Mongol invasion of 656 H. (1258 A.D.) caused a gap in the history of the town, and because of the neglect of the canal system it seems to have become deserted.

Ubulla was famous for one thing only, its turbans, and many authors have mentioned them. The *Ḥudūd al-ʿĀlam* says: "From it come the Bulli kerchiefs and turbans (dastār va-ʿamāma-yi bullī)."[50] Maḳdisī stated: "In Ubulla are made garments of linen (kattān), after the manufacture of ḳaṣab (a linen stuff often decorated with gold or silver)."[51] These turbans are mentioned by Thaʿālibī,[52] Gharnāṭī,[53] and Nuwairī.[54]

The main point of interest about this group is that the three largest cities were Arab foundations with a mixed population, strongly influenced, no doubt, by the Fars-Khuzistan group, itself largely founded with prisoners from the eastern part of the Byzantine empire.

[42] Yāḳūt, *op. cit.* I, 649. If any reliance could be placed on this passage, it would, of course, show that state factories existed in the reign of ʿAbd al-Malik.

[43] Ibn al-Faḳīh, *op. cit.*, p. 121.

[44] *Ḥudūd al-ʿĀlam*, p. 139.

[45] Maḳdisī, *op. cit.*, p. 33.

[46] *Ibid.*, p. 128 (for the second khazz, perhaps one ought to read djūr = "rosewater" which would suit the context better.

[47] Nāṣir-i Khusraw, *Safar-nāma*, ed. and trans. by C. Schefer (Paris, 1881), text, p. 83, trans., p. 228.

[48] *The Itinerary of Benjamin of Tudela*, trans. by M. N. Adler (London, 1907), p. 51.

[49] Ibn Ḳutaiba al-Dinawārī, *ʿUyūn al-Akhbār*, (Cairo, 1343 H. [1925 A.D.]), I, 217. See E. Blochet, *Musulman Painting, XIIth–XVIIth Century* (London, 1929), Pl. VIII.

[50] *Ḥudūd al-ʿĀlam*, p. 138.

[51] Maḳdisī, *op. cit.*, p. 128.

[52] Thaʿālibī, *op. cit.*, p. 132.

[53] "Le *Tuḥfat al-Albāb* de Abū Ḥāmid al-Andalusī al-Gharnāṭī," *Journ. asiatique*, CCVII (1925), 211.

[54] Nuwairī, *op. cit.*, I, 356.

Information about this area is meager, but the trousercords of Ṭīb, compared to the Armenian kind, might thus ultimately trace back their origin to the latter province, both as regards design and technique.[55]

The Iraq silks were always famous, and the *Aghānī*[56] states that Mus'ab ibn Zubair sent to 'Umar ibn Abī Rabī'a garments of the figured washī-stuffs and khazz-silk of Iraq, about the middle of the first century of the Hijra. The *Aghānī* also refers to the silken robes of Iraq in the governorship of al-Ḥadjdjādj (the first century H.).[57] The products of Iraq were exported far and wide, miṭraf cloaks, tents (surādiḳāt), and Dja'farī silk (khazz) being noted in a present made to al-Nāṣir, the Umayyad caliph in Spain during the year 327 H. (939 A.D.).[58] The Fatimids, too, stored silks from Iraq in their treasuries, and *The Arabian Nights*[59] mentions silken hair strings (djadā'il al-sha'r) of Iraqi silk (al-ḥarīr al-'Irāḳī), probably referring to the Mameluke period.

NORTHERN MESOPOTAMIA

There are several villages in the vicinity of Baghdad where various types of cloth were woven. Yāḳūt's *Encyclopaedia* records: "In Ḥarbā coarse cotton garments which are taken to other lands, are woven.[60]. . . In Ḥaẓīra the garments of close-woven muslin (kirbās) textiles which merchants carry to other lands, are woven."[61] The most curious notice is to be found in Ya'ḳūbī: "In Nahrawān are made the carpets (fursh) of which Armenian stuff is manufactured, and then they are taken to Armenia and spun and woven there."[62]

Of Anbār, a Sasanian arsenal from the time of Shāpūr II (310–79 A.D.), Idrīsī[63] asserted that they made stuffs for export. This is the sole reference to a city where it is virtually certain that there were many cloth factories. Maḳdisī[64] reported that Takrīt is the home of workers in wool, numbering the wool of Takrīt among the special products of Iraq. Idrīsī[65] added that most of the inhabitants were Christians.

Jazira was very closely connected with Armenia, and probably strongly influenced by the Armenian types of textiles, which were exported downstream to Baghdad and Persia.

Mosul, the capital, has always been a celebrated weaving center. Djāḥiz[66] stated that curtains (sutūr) and striped robes (musūḥ[67]) came from Mosul. The *Laṭā'if al-Ma'ārif*,[68] too,

[55] R. Pfister, "Les Premières soies sassanides," *Études d'orientalisme publiées par le Musée Guimet à le mémoire de Raymonde Linossier* (Paris, 1932), pp. 461–79.

[56] *Aghānī*, IX, 244.

[57] *Ibid.*, VI, 35.

[58] Maḳḳarī, *Analectes sur l'histoire et la littérature des arabes en Espagnes*, ed. R. Dozy and others (Leyden, 1855–61), I, 229–31. See the note on Dja'farī in Chapter XVII.

[59] *The Arabian Nights*, trans. by E. W. Lane (New York, 1927), pp. 362–63. *Alf Laila wa-Laila* (Beyrouth, 1914), II, 222.

[60] Yāḳūt, *op. cit.*, II, 235. Repeated in Yāḳūt, *Marāṣid al-Iṭṭilā'*, ed. T. G. J. Juynboll (Leyden, 1850–64), p. 295.

[61] Yāḳūt, *Mu'djam al-Buldān*, II, 292.

[62] Ya'ḳūbī, *Kitāb al-Boldān, B.G.A.* (Leyden, 1892), VII, 322.

[63] Idrīsī, *op. cit.*, II, 469.

[64] Maḳdisī, *op. cit.*, pp. 197 and 128.

[65] Idrīsī, *op. cit.*, I, 147.

[66] Djāḥiz, *op. cit.*, p. 347.

[67] The editor of the *Tabaṣṣur* cited Ibn Sīda, saying that the misḥ is a striped robe (kisā' mukhaṭṭaṭ).

[68] Tha'ālibī, *op. cit.*, p. 111.

mentions the curtains of Mosul in a long list of fine stuffs. In a story set in the reign of Rashid, *The Arabian Nights*[69] makes mention of a turban, as worn by the viziers, except that it was of the Mosul kind, and, again,[70] in Baghdad, of a Mosul izār (woman's cloak) of silk, with a gold-embroidered shoe, with a border (ḥāshiya) of ḳaṣab and a cord hanging loose.

Marco Polo stated: "All the cloths of gold and silk that are called Mosolins are made in this country; and these great merchants called Mosolins who carry for sale such quantities of spicery and pearls, and the cloths of silk and gold, are also from this kingdom."[71] Sharaf Khan Bidlīsī (1005 H. [1596 A.D.]) said: "At Mosul 'boucassins' (Būghāṣī) of great price, are made .... the black stuffs of Mosul are quite lovely."[72]

Of Mardīn, Ibn Baṭūṭa observed: "They make stuffs here which take the name of the town, and which are made with wool (ṣūf) known as Mir'izz (a name given to the finest goathair)."[73] Niṣibīn, too, belongs to this group. Mas'ūdi mentioned that Roman prisoners were settled in Niṣibīn and Manūt, and curtains (sutūr) and carpeting (fursh) are made there to this day.[74] Ibn Ḥawḳal[75] commented that it had cotton and Idrīsī,[76] that it had many industries, notably the manufacture of beautiful stuffs.

Ra's al-'Ain, according to Iṣṭakhrī,[77] mostly produced and exported cotton. "To Ḥazza are ascribed the Naṣāfī cloths of Ḥazza, which are inferior cotton cloths," said Yāḳūt.[78] Ḥarrān, too, produced cotton, according to Maḳdisī.[79]

Yāḳūt[80] cited Ibn Ḳutaiba as speaking of a Manbidjī robe, while Abu'l-Fidā' said that most of its trees were mulberries for the silk (ḳazz).[81] 'Arābān, said Ibn Ḥawḳal,[82] "has much cotton, garments of this material being brought from it and despatched to Syria (Sha'm)."

The port of the province was Djazīra ibn 'Umar (Zabdicena), of which Idrīsī[83] wrote: "Djazīra ibn 'Umar is an emporium for trade with Armenia and the Armenian country of Maiyafāriḳain and Arzan. It is there that the ships laden with merchandise for Mosul stop."

Mustawfī's[84] list of cotton-growing towns in this region comprises Irbīl, Bāṣabda, Arzan, Ra's al-'Ain, Barṭallā, Mardīn.

[69] *The Arabian Nights,* trans. by Lane, p. 44.

[70] *Ibid.,* p. 110.

[71] *The Book of Ser Marco Polo,* trans. and annotated by H. Yule (London, 1875), I, 62.

[72] Sharaf Khan Bidlīsī, *Scheref Nameh ou Fastes de la nation kourde,* trans. by F. B. Charmoy (St. Petersburg, 1868–75), I, 224.

[73] Ibn Baṭūṭa, *op. cit.,* II, 143f.

[74] Mas'ūdī, *op. cit.,* II, 185–86. Cf. Tha'ālibī, *Thimār al-Ḳulūb,* p. 428: the curtains of Niṣibīn (sutūr). Ibn Baṭūṭa (*op. cit.,* II, 388) confirmed this name, but if the *Mu'djam* (II, 469) is followed, one should read Baṣinnā and Mattūth, both in Khuzistan.

[75] Ibn Ḥawḳal, *op. cit.,* p. 213.

[76] Idrīsī, *op. cit.,* II, 150.

[77] Iṣṭakhrī, *op. cit.,* p. 74.

[78] Yāḳūt, *op. cit.,* II, 263.

[79] Maḳdisī, *op. cit.,* p. 145.

[80] Yāḳūt, *op. cit.,* IV, 655; and Sharaf Khan Bidlīsī, *op. cit.,* I, 277.

[81] Abu'l-Fidā', *op. cit.,* text, pp. 270–71.

[82] Ibn Ḥawḳal, *op. cit.,* p. 222.

[83] Idrīsī, *op. cit.,* II, 153.

[84] Hamd-Allāh Mustawfī Ḳazwīnī, *The Geographical Part of the Nuzhat-al-Ḳulūb,* trans. by G. Le Strange, Gibb Mem. Ser. (Leyden-London, 1919), XXIII, II, 102–5.

IVORY POWDER FLASKS FROM THE MUGHAL PERIOD*

BY WOLFGANG BORN

THERE ARE IVORY HORNS SCATTERED THROUGH THE MUSEUMS OF VARIOUS NATIONS, WHICH, in spite of their striking similarity, have not yet been treated as a distinct group of works of art. Even their origin is questioned; some are labeled Persian. Experts on arms, however, have stated correctly that they were made in India during the seventeenth and eighteenth centuries.[1]

No reason has been given for this statement so far, nor has any attempt been made to define the style of the horns. The nearest approach to a definition was made in the middle of the nineteenth century, when in a catalogue of the Museum of Tzarskoe-Selo near Leningrad, two such horns were described as "pulverins hindo-musulmans en ivoire. Tout deux offrent des combats ou melées d'animaux d' une conception bizarre, des oiseaux et lièvres poursuivis par des chiens, une panthère s'élançant sur une gazelle endormie, etc., sujets que l'on rencontre ordinairement sur ces pulverins." [2] The description is lucid, and the attribution is obviously based on an authentic tradition. The horns date from the Mughal period and bear a seemingly incoherent decoration of fighting animals.

The history of Indian ivory is not yet written. Until recently very few Indian ivories older than the sixteenth century A.D. were known. Until recent excavations bore out the references [3] the history of ivory carving could be traced back to earlier times [4] only by literary evidence. Religious scruples of the Hindus used to be quoted as a reason of an allegedly late

* I wish to express my thanks for valuable assistance to Dr. Ananda K. Coomaraswamy, of the Museum of Fine Arts, Boston, to Dr. Richard Ettinghausen, of the University of Michigan, to Mr. Stephen V. Granscay, of the Metropolitan Museum, and to Dr. Thomas T. Hoopes, of the City Art Museum, St. Louis. I should also like to acknowledge the help of the authorities of the Walters Art Gallery, Baltimore, and of the Field Museum of Natural History, Chicago. Finally, I am indebted to Mr. Perry T. Rathbone, Director of the City Art Museum, St. Louis, and to Miss Joan Waddell, of Chicago, who kindly read and edited the manuscript.

[1] Egerton of Tatton, *A Description of Indian and Oriental Armour* (London, 1896), pp. 46–47; G. C. Stone, *A Glossary of the Construction, Decoration and Use of Arms and Armor* (Portland, Me., 1934), p. 515, Figs. 4–15.

[2] *Musée de Tzarskoe-Selo ou Collection d' armes de sa majesté l'empereur de toutes les Russies,* Introduction by F. Gille (St. Petersbourg and Carlsruhe, 1835–53), Pl. LXXI, Nos. 2–3. No. 2 is similar to my Figure 7, and No. 3 is similar to my Figure 9.

[3] A. Ghose, "Some Old Indian Ivories," *Rupam,* No. 31 (1927, 122–23; ivory seals recalling Sumerian models, at Mohenjo Daro, cf. A. K. Coomaraswamy, *History of Indian and Indonesian Art* (London, 1927), p. 4, Pl. II, Figs. 2–6; ivory plaques from Begram, Afghanistan, first to third century A.D., by their style related to contemporary stone reliefs in India, cf. J. Hackin and Mme J. Hackin, "Récherches archéologiques à Begram, chantier No. 2 (1937)," *Mém. délégation archéol. Afghanistan* (Paris, 1929), IX; J. Hackin, "The 1939 Dig at Begram, II," *Asia* (1940), 608–12; J. P. V[ogel], in *Kern Institute, Leyden, Ann. Bibliography of Indian Archeol.,* XII (Leyden, 1939), 30–40, Pls. 9, 10; and ivory statuette of the Hindu goddess Laksmī, about 185 B.C. to 50 A.D., found in Pompei; cf. A. Maiuri, "Statuetta eburnea di arte indiana a Pompei," *Le Arti,* I (1938), 111–15; baluster-shaped ivories of Hindu workmanship, seventh century or earlier, excavated in Brahminabad in Sind (northwestern India), cf. *Archeological Survey of India, Ann. Ref.,* 1908–9, p. 85; an eighth-century chessman in the Louvre, cf. Ghose, *op. cit.,* pp. 123–25, Pl. 1.

[4] Ghose, *op. cit.,* p. 122; ivory workers between 642 and 320 B.C. and in the second and first centuries B.C., cf. Coomaraswamy, *op. cit.,* pp. 10, 36.

development of ivory carving,[5] but restrictions against the working of ivory and other animal materials were aimed at higher castes only. The use among Hindus of ivory carvings for the decoration of interiors is documented.[6] It is true that under the Mughals ivory carving was encouraged; but at the same time a school of ivory carving flourished in the Buddhist island of Ceylon, and a similar one in the Hindu state of Travancore in South India.[7] North Indian ivories of Rajput origin are also known.[8] Furthermore, there are South Indian and Singhalese ivory carvings which are distinguished by their sophisticated decorative style, with an abundant, flamboyant scroll ornamentation and mythological figural motifs.

In the Portuguese colony of Goa there was a school of ivory carving which produced works of a hybrid style, fusing Christian with Hindu, Mughal, and early Persian elements.[9] Groups of ivory figures known as the "shepherd" or "pilgrim rockery," which date from the middle of the seventeenth century, are probably of Goanese origin.[10]

[5] G. Watt, *Indian Art at Delhi, 1903* (London, 1904), p. 171; K. de B. Codrington, "Mughal Marquetry," *Burlington Mag.,* LVIII (1931), 79.

[6] According to a statement made by Paes about 1522, a room in the palace of Vijayanagar, province of Madras, was decorated with ivory carvings of lotus, roses, and other flowers, cf. Coomaraswamy, *op. cit.,* p. 123. Vijayanagar was a Hindu kingdom from 1336 to 1565; Ghose, *op. cit.,* p. 125; inlaid ivory door and throne from Amber (Jaipur), seventeenth century, cf. P. Joyce, "Amber-Indian Fairyland," *International Studio,* XC (1925), 385, figs. on p. 384 above and below.

[7] Two ivory caskets in the Residenzmuseum, Munich, about 1543, cf. V. Slomann, "Elfenbeinreliefs auf zwei singhalesischen Schreinen des sechzehnten Jahrhunderts," *Pantheon,* XX (1937), 357–63; XXI (1938), 12–18; two ivory caskets and an ivory fan in the Kunsthistorisches Museum, Vienna. The first dates from the second half of the sixteenth century; cf. W. Born, "Some Eastern Objects from the Hapsburg Collections," *Burlington Mag.,* LXIX (1936), 275, Pl. 3. The second Vienna casket probably dates from the seventeenth century, cf. W. Born, "More Eastern Objects Formerly in the Hapsburg Collections," *Burlington Mag.,* LXXV (1939), 64, Pl. 1 A; the fan, *ibid.,* Pl. 1 C. The two papers which appeared in the *Burlington Magazine* were written before Slomann's paper appeared in the *Pantheon;* I had not seen it when I tried to determine the date of the origin of the caskets by their style. The dates given in the *Burlington Magazine* articles for the Vienna caskets have proved to be too late and are corrected above according to Slomann's findings; an ivory casket which is preserved in the Indian Museum, London, probably seventeenth century, cf. Born, *op. cit.,* p. 64, Pl. 1B; an ivory casket in the British Museum, probably early seventeenth century, South India, cf. E. and R. L. Waldschmidt, "Das Kunstgewerbe Süd-und Hochasiens," *in* H. T. Bossert, *Geschichte des Kunstgewerbes* (Berlin, 1930), III, 219, Fig. 1; a group of ivory panels, which were originally parts of a casket in the Arthur Michael Collection, Newton, Mass., probably early seventeenth century, South India (probably Travancore), cf. A. K. Coomaraswamy, "An Ivory Casket from Southern India," *Art Bull.,* XXIII (1941), 207–12, with plate; ivory cabinets and caskets in the India Museum and other articles of a mixed Dutch and Singhalese style, seventeenth century, cf. K. de B. Codrington, "Western Influences in India and Ceylon: A Group of Singhalese Ivories," *Burlington Mag.,* LIX (1931), 239–46, Pls. 1, 2; round toilet boxes, South India, seventeenth and eighteenth centuries, cf. H. Goetz, "Geschnitzte Elfenbeinbüchsen aus Süd-Indien," *Jahrb. d. asiatischen Kunst,* II (1925), 77–86; miscellaneous Singhalese and South Indian ivory carvings, cf. A. K. Coomaraswamy, *Medieval Singhalese Art* (London and Broad Campden, 1908), pp. 183–86, Pls. 35–41, and *idem, History of Indian and Indonesian Art,* p. 135, Figs. 387–89; eighteenth century (?) ivory relief and combs, cf. Ghose, *op. cit.,* pp. 127–29, Pl. 3, Figs. J, H, I.

[8] Ghose, *op. cit.,* p. 127; a panel showing a princess, second half of the eighteenth century, cf. A. K. Coomaraswamy, "An Indian Ivory," *Boston Mus. Fine Arts, Bull.,* XXXVII, No. 221 (1939), 51 (illus.).

[9] Ghose, *op. cit.,* pp. 125–26, Fig. K; Codrington, "Mughal Marquetry," p. 83.

[10] O. M. Dalton, *Catalogue of the Ivory Carvings of the Christian Era* (London, 1909), p. 170; J. Strzygowski, *Asiens bildende Kunst* (Augsburg, 1930), p. 331, Fig.

In the eighteenth century, ivory carving spread over a wide area. Important centers of the production were Delhi in the Punjab, Murshidabad in Bengal, Mysore and Travancore in South India, and Moulmein in Burma.[11] In Delhi and Amritsar the craft was probably introduced during the Mughal period.[12]

In the nineteenth century, ivory carving was sponsored by the British administration. Since it depended, however, on the taste of foreign tourists, the art deteriorated. It was produced by mass methods in bad style, characterized by overdecoration and photographic realism.[13]

Ivory pen boxes of the Mughal period have Indo-Persian floral motifs.[14] Inlaid and carved ivory panels of the same period are decorated with a trelliswork which was developed in India or with Arabic polygonal patterns common to the whole Muhammadan world.[15] Ivory representations of the human form were carved in the round by Mughal craftsmen not earlier than the eighteenth century. They are unassuming statuettes of a blocked and conventionalized style, not lacking entirely, however, in naturalistic traits.[16] Coomaraswamy has suggested that a systematic study of Indian ivory might shed more light on the history of design in India than anything else.[17]

Aside from elephant ivory, walrus ivory, seahorse or hippopotamus ivory, and fossil ivory from Siberian mammoths were used, especially for carved dagger hilts. These materials were called "fish tooth" (machli-ka-dant) and were said to be less liable to slip in the hand than was elephant ivory.[18] The powder flasks illustrated here, which are preserved in American collections, are known to be of elephant ivory, but this does not exclude the possibility that "fish tooth" was used occasionally as a raw material for powder flasks.

As far as their execution is concerned, the priming flasks are of skilled workmanship in both relief work and figures in the round. Only a long development which preceded the origin of the powder primers reviewed here could explain their technical perfection. The texture of

339; O. Aleksandrowicz-Schwanenfeld, "Eine Elfenbeinstatuette des Yima in Krakauer Privatbesitz," in *Josef Strzygowski-Festschrift* (Klagenfurt, 1932), pp. 9–14, Fig. 2.

[11] Watt, *op. cit.*, p. 174.

[12] *Ibid.*, pp. 175, 176.

[13] J. L. Kipling, "Indian Ivory Carving," *Journ. Indian Art and Industry*, I, No. 3 (1886), 49–53, Pls. 1-10; L. M. Stubb, "Ivory Carving in the North-West Provinces and Oudh," T. P. Ellis, "Ivory Carving in Punjab," L. Burns, "A Monograph on Ivory Carving," J. Donald, "Ivory Carving in Assam," H. S. Pratt, "Ivory Carving in Burma," *Journ. Indian Art and Industry*, IX, Nos. 70–80 (1902), 41–60, Pls. 80–88; B. Thurston, *On the Ivory Carving Industry of South India* (Madras, 1901), and G. G. Dutt, *Monograph on Ivory Carving in Bengal* (Calcutta, 1901), were not accessible to me; Watt, *op. cit.*, pp. 172–93, 481–82; V. Smith, *A History of Fine Art in India* (Oxford, 1911), pp. 370–72, Pl. 83, Figs. A, B.

[14] A. K. Coomaraswamy, *The Arts and Crafts of India and Ceylon* (London and Edinburgh, 1913), p. 145.

[15] Doors of the Athar Mahall at Bijapur, built by Sultan Muhammad, 1636–50, and similar examples, cf. Codrington, *op. cit.*, p. 80.

[16] Late ivory statuettes, cf. Ghose, *op. cit.*, p. 127, Pl. 2, E, F, G; *idem*, "A Late Moghul Ivory," *Rupam*, No. 38 (1929), 103 (with illus.); *idem*, "Pieces from a Complete Chess Set in Carved and Coloured Ivory, Delhi Made, Eighteenth Century," *Apollo*, XXII (1935), 213 (with plate).

[17] Coomaraswamy, *op. cit.*, p. 245.

[18] Watt, *op. cit.*, p. 173; Coomaraswamy, *op. cit.*, p. 182; T. H. Hendley, "Indian Animals, True and False," *Journ. Indian Art and Industry*, XVI (1914), Pl. 13, *b*: sword hilt, walrus ivory, with gold tiger's or lion's heads.

the skin of the animals that decorate the powder flasks is either not characterized at all or is only suggested by incised lines. In some instances the eyes of the animals are inlaid with amber or semiprecious stones (*Fig. 1*).

A powder horn in the specific sense of the word contained the powder which supplied the charge passing through the nozzle and gave out the requisite quantity for each discharge. The horns of the group described here are smaller and were used to prime the flashpan and touchhole of a musket.[19] Priming is the act of filling the pan with a powder which is finer than that used in the charge. In Europe the priming flask was frequently a small counterpart of the flask used for charge powder and often combined with the spanner for wheel locks, whereas in the East the primer developed independently in form and decoration.[20]

Many Indian priming flasks are provided with a spanner (*Fig. 5*). A French primer and spanner dated 1550, which originally was in the possession of King Henry II of France, is now in the Metropolitan Museum, New York.[21] It is decorated with a geometric pattern, and its outline differs from that of the Indian type, but its appearance resembles that of the Indian priming flasks in a general way. Obviously, Indian craftsmen used imported primers as models but altered their forms.

Only rarely can powder horns or primers be found illustrated in Mughal miniatures. In an illustration of the *Ā'īn-i-Akbarī* preserved in London [22] and painted probably at the end of the sixteenth century, Akbar is seen hunting at Palam, near Delhi, in 1568. The second figure to the right in the front row wears a horn attached to his belt.[23] In a border decoration of Djahāngīr's Album in the State Library in Berlin which was painted between 1609 and 1618, the second figure from the bottom is a hunter and wears a small horn slung around his neck.[24] Neither of the two examples, however, can claim to be an illustration of the type of priming flask reviewed here. The latter is characterized by a fishlike form, which does not appear either in Persian or in other Eastern examples. In Persia firearms came into use at the end of the sixteenth century. Persian powder flasks retained the traditional form of a horn down to the nineteenth century.[25]

The Indian powder flasks differ in details, but not fundamentally. An example in the National Museum of Antiquities in Edinburgh serves to describe the type (*Fig. 1*). It is about eight inches long and consists of a container and a lid. The first forms about three-fifths, the latter two-fifths, of the length of the entire fish-shaped object. The container is divided into an area covered with a low relief and a finial carved in the round. The relief shows a leopard-

[19] W. B. Redfern, "Powder Horns and Primers," *The Connoisseur,* LXV (1916), 211.

[20] Stone, *op. cit.,* p. 515.

[21] *Ibid.,* Fig. 515, No. 6.

[22] T. H. Hendley, "Sport in Indian Art," *Journ. Indian Art and Industry,* XVII, n.s., No. 134 (1916), Pl. 7*b*; P. Brown, *Indian Painting under the Mughals* (Oxford, 1924), p. 117.

[23] A similar horn made of Buffalo horn and inlaid with mother of pearl, nineteenth century, Rajputana, cf. "Ivory Inlays," *Journ. Indian Art and Industry,* I, No. 1 (1884–86), 11, Pl. 18.

[24] E. Kühnel and H. Goetz, *Indian Book Painting* (London, 1926), Fol. 15*b* on Pl. 27.

[25] H. Stöcklein, "Arms and Armour, Fire Arms," in *A Survey of Persian Art,* ed. by A. U. Pope and P. Ackerman (London and New York, 1939), III, 2663, Pl. 1430 G; an ivory powder primer of a Persian form and decor-

like animal, an antelope, and a bird, probably a falcon, among plants, and is framed by borders, one of which is decorated with trefoils in open work. The finial consists of a jumping antelope and some antelope heads which surround its hind legs. The lid is divided into a part decorated with a relief and a finial carved in the round. The relief shows birds enclosed in rectangular compartments; the finial shows a large antelope head with amber eyes, small front legs, and shoulders surrounded by small animal heads and birds.

The whole object is a "composite animal"; the outline of a fish is filled with animals of different species. The animals which are represented in relief are rather true to life; those which are carved in the round are fanciful and conventionalized. In the Historisches Museum in Dresden, there are two Indian priming flasks; one of them (*Fig. 2*, right, and *Fig. 3*, back view) shows a sea monster which vaguely recalls an alligator. In its open mouth is a bird.[26]

The end of a powder primer in the Metropolitan Museum, New York, is carved with the fore parts of two antelopes which are joined together (*Fig. 4*). Their heads are carved so that they appear like a single complete head when viewed from any direction. The anterior end is carved with a sea monster which recalls an alligator, but has pointed ears; an antelope protrudes from its open mouth.[27] The upper end of a powder primer in the Walters Art Gallery, Baltimore, shows the heads of an antelope and a ram joined together (*Fig. 5*). A beast of prey seems to pursue the creature. The antelope horns of the hybrid animal protrude from the mouth of a sea monster. The monster recalls an alligator, but has pointed ears, a mane, and a reversed horn on its nose. On the upper part of the container is a fish. The finial of the container shows an animal which recalls a buffalo, but has no horns. It is pursued by a beast of prey. An elephant's and a ram's head are connected with the group.

Apart from ivory horns there are Indian primers made of other materials which show a zoomorphic decoration: e.g., a silver fish with a bird's head on its tail, and an eel-like fish made of a black horn with a bone mouthpiece in the form of a fish head;[28] in the collection of the Maharaja of Jaipur there are two larger powder horns made of horn and ivory with finials in the forms of a sea monster's head and an elephant's head respectively.[29]

In the Egerton collection there is an Indian priming flask of Hindu origin formed out of a gayal horn (*Fig. 13*).[30] The horn ends in a head of a sea monster of the same alligator-like

ation, without animal decoration, is in the Metropolitan Museum, New York (Acc. No. 36.25.2360); a similar example in the Metropolitan Museum is in the form of an antelope (Acc. No. 36.25.2421). Both are labeled Indian, but at least the first seems to be of Persian origin.

[26] R. A. Grider, "Powder Horns. Their History and Use," *New York Hist. Soc. Quart. Bull.*, XV, No. 1 (1931), 5 (with illus.); Historisches Museum, Dresden, Orientalischer Saal, in *Die Staatlichen Sammlungen zu Dresden, Führer* (Dresden und Berlin, 1932), p. 176.

[27] A similar example which is enriched by a relief of a beast of prey attacking a deer, cf. W. Boeheim, "Über einige Jagdwaffen und Jagdgeräte," *Jahrb. d. kunsthistorischen Sammlungen in Wien,* II (1884), fig. on p. 144 (not described in the text); A. Grosz and B. Thomas, *Katalog der Waffensammlung in der Neuen Burg* (Wien, 1936), p. III, Twenty-first Glass Case, 38 (C266), "Pulverhorn aus Elfenbein, mit geschnitzten Tierköpfen, Indopersisch, 17. Jahrhundert."

[28] Stone, *op. cit.*, Fig. 660, Nos. 12, 18.

[29] T. H. Hendley, *Memorials of the Jeypore Exhibition, III* (London, 1883), Pl. 133, 134.

[30] Egerton of Tatton, *op. cit.*, p. 47, Fig. 5. The gayal is a domesticated ox allied to the gaur.

type which appears in the ivory horns. A winged female figure proceeds out of its open mouth.

The form of the monster of the gayal horn recalls the makara of Hindu mythology. The heads of the sea monsters represented on Mughal primers seem to be copied from the same Hindu source. The makara is a fish-tailed animal which served to carry Yakshas (genii). In early art it was represented "with a head like a crocodile, but with horns or fleshy feelers extending from the end of the long mouth, with sharply pointed teeth; at first with four, later with two or four rather leonine or doglike legs, and a scaly body and tail first crocodilian, later ending like a fish's . . . . Sometimes a man or some animals are represented as emerging from or springing from the open jaws . . . . Makaras control the essence in the waters." Water, however, was considered the origin of life, and "fish proper . . . . are a common auspicious symbol in India. . . . In comparative mythology the makara is an analogon of the Greek dolphin, the symbol of the waters, the king of 'fish.' " [31]

Some makaras carved in the stone fence of the Barhut stupa and some later examples which served as gargoyles of fountains resemble the crocodilian monsters of the ivory priming flasks in details.[32] The gargoyles approximate the form of heads of elephants as does the monster of an ivory priming flask in the Metropolitan Museum (*Fig. 6*). A stone makara of the third century B.C. or earlier in the Museum of Fine Arts, Boston, recalls the general appearance of the ivory priming flasks by its undulating fish form (*Fig. 14*).[33] No direct connecting link between this work of the Maurya period and the Mughal powder primers is known, but it is not impossible that a succession of works made of perishable materials might have preserved the ancient design up to the time of the Mughals. The works which formed the connecting links probably are not preserved, or, if some of them have survived, they have escaped the attention of students so far. Peasant art and other unassuming strata of art often serve as connecting links between periods of advanced art which are separated by long intervals. This explains the disappearance of the evidence.

A seventeenth-century ivory hunting horn of Eastern inspiration in the Historisches Museum, Dresden (*Fig. 2*, middle), is an interesting European parallel. It has the form of a dolphin and shows an undulating outline.

The makara can be considered a primary source of the undulating form of the priming flasks, although not all of them end in heads of sea monsters or show sea monsters in their decoration. In order to find a fish, the body of which is decorated with and consists of mammals, fishes, and birds, like the ivory priming flasks, one must go back to the "animal style" of the steppe, which extended from eastern Asia to eastern Europe.

A golden fish which belongs to a Scythian treasure discovered in Vettersfelde, Germany, is now in the Antiquarium of the Staatliche Museen, Berlin (*Fig. 10*). It dates from the first

[31] A. K. Coomaraswamy, "Yakṣas, Pt. II," *Smithson. Instit. Publ.*, 3059 (1931), 13, 14, 46.

[32] J. P. Vogel, "Le Makara dans la sculpture de l'Inde," *Revue des arts asiatiques*, VI (1932), 3, Pl. 33C, 38A (with a figure emerging from a snout).

[33] A. K. Coomaraswamy, "An Indian Crocodile," *Boston Mus. Fine Arts, Bull.*, XXXIV (1936), 26–28, Fig. 2.

part of the fifth century B.C. Its surface bears a relief decoration of a lion chasing a stag, a leopard chasing a boar, fishes, and a fish-tailed god grasping the tail of a dolphin. The fishes are chased by a bird of prey. All the motifs are related to the hunt. The tail fins of the golden fish end in rams' heads. A similar object consisting of two connected fish figures decorated with small fishes and eagles was discovered in Ssolocha on the Crimean Peninsula. The fishes from Vettersfelde and Ssolocha were frontlets of horses. It has been stated conclusively that they served as amulets for the protection of horses by the goddess Anāhit, who was worshipped first in Syria and later in Persia as a goddess of fertility and life and, therefore, was related to the life producing element of the water; the fish was her sacred animal and was considered a symbol of life and luck. Consequently, representations of fishes were used as charms all over the Near East.[34]

The fusion of various animals or fragments of animals into one is a distinguishing trait of the "animal style" of the steppes. The "animal style" flourished for about a thousand years, from the appearance of the Scythians in the seventh century B.C. to the end of the Han period in the third century A.D., not including its preparatory stages, which reach back to the third millennium B.C., and its after life, which can be traced up to the Middle Ages. It gradually spread over an immense area between the Far East and Central Europe inhabited by various races and nations. Thus, it is obvious that the meaning of its recurrent motifs changed both in the lapse of time and in its geographical and ethnical distribution.[35] Mythology is the back-

[34] F. J. Dölger, *Ichthys, II, Der heilige Fisch in den antiken Religionen und im Christentum* (Münster in Westfalen, 1922), 183, 188, 199, 202, 206–10 (Dölger's interpretation of the fishes from Vettersfelde and Ssolocha is based on researches by Rostovzeff, Farmakovsky, and others); *idem, IV, Die Fischdenkmäler in der frühchristlichen Plastik, Malerei und Kleinkunst* (Münster in Westfalen, 1927), Pls. 13 and 14, 3; megalithic parallels in the Caucasus area: monoliths in the form of fishes decorated with animal reliefs are found in Armenia and Georgia, cf. N. Marr and J. Smirnow, *Les Vichaps* (Leningrad, 1931), F. Hančar, "Zum Problem des 'Kaukasischen' Tierstils," *Wiener Beiträge zur Kunst- und Kulturgeschichte Asiens,* IX (1935), 5–7, Pl. 2.

In the Indian Museum, London, there is a head ornament of a horse decorated with a winged fish. The fish has an undulating outline. A turah, or drop, in the form of an ornate bell is suspended from its mouth. The article is of the Mughal period. T. H. Hendley, *Indian Jewellery* (London, 1906–9), Pl. 4, No. 6.

[35] A. Alföldi ("Die theriomorphe Weltbetrachtung in den hochasiatischen Kulturen," *Archäol. Anzeiger,* 1931, pp. 394–418) suggested a totemistic interpretation of the "animal style." He considered the animals of Scythian and related works of art mythical ancestors of central Asiatic tribes; J. Strzygowski (*Asiatische Miniaturenmalerei* [Klagenfurt, 1932], pp. 223–34) interpreted the meaning of the "animal style" and its revivals as animal magic (Tierzauber), but failed to specify the term; J. Zykan ("Der Tierzauber," *Artibus Asiae,* V [1935], 203–12) proposed a cosmological explanation of the motifs of the "animal style" by recalling the fact that animals have been used as symbols of constellations and generally celestial apparitions since early historic times in Mesopotamia. From Mesopotamia cosmological symbols in the forms of animals have spread to other areas of the East (cf. A. U. Pope, "The Significance of Persian Art," in *A Survey of Persian Art,* ed. by A. U. Pope and P. Ackerman (London and New York, 1938), I, 20: "On the court carpets of the Safavids the Summer Solstice lion slays the Spring Equinox bull in almost the same pose that served for three millennia before the advent of Islam and repeatedly carried apotropaic assurance on Sāsānian seals"); H. Frankfort, *Cylinder Seals* (London, 1939), p. 316, took the motifs of the "animal style" for mere decorative elements derived from ancient Mesopotamian prototypes.

The theories quoted above might explain some adaptions of the "animal style"; the first refers to hunting tribes which had retained an archaic organization, the second to advanced nations which were familiar with astrological ideas, and the third to a more or less urban

ground of every iconography, including that of the "animal style,"[36] but an even more ancient intellectual stratum, namely that of animism, has contributed to the formation of this zoomorphic decoration. It is well known that hunting magic was practiced in the form of mimetic magic by paleolithic cave painters, whose attitude decidedly was determined by an animistic interpretation of nature. Animism includes the assumptions that each natural object is inhabited by a demon, and that all nature is animated by a psychic element which relates every part of creation to itself in a magic way. Parts of dead animals were thought to add their qualities to men who wore them on their bodies. Every object of organic and of inorganic nature could serve as a charm that was expected to fulfill a wish by magic means. Primitive man considered it possible to materialize a desired object or event by the creation of its image.[37] The appearance of conventionalized hunting scenes in the "animal style" suggests an analogous explanation.[38] In a late, retrogressive stage, the "animal style" survived among shaman tribes in Siberia between 600 and 800 A.D., in an animistic civilization.[39] Bronze amulets show shamans protected by animal spirits; their feet are bird claws, their knees support birds, their arms end in elk heads, and they wear bear heads on their elbows. I conclude from this that an "animal style" decoration was applied to ornaments, weapons, and other objects in order to impart to them the protective power of an amulet. In the case of the fish from Vettersfelde, mythological implications have led to an analogous interpretation. As there is no strict borderline between protective amulets and talismans which bring good luck, a decoration carried out in the "animal style" can turn an object into a talisman as well as into an amulet.

The profession of hunting exposes men to the dangers of wild life, and thus has contributed to the continuation of magic practices otherwise extinct in advanced civilizations. The magic bullets in *Der Freischütz* are a well-known example of the survival of hunting magic in the folklore of Europe. This is even more true of India, where charms are very popular.

It has been stated that basic principles of the "animal style" have reappeared in the decoration of Indian priming flasks; it has also been pointed out that an "animal style" decoration was considered of magic value for the hunter if applied to his weapons and utensils. The Mughal period shared the belief in magic practices handed down to it from a remote past. Djahāngīr is known to have coined mohurs with the signs of the zodiac which gave them the character of amulets.[40] Through their zoomorphic decoration which decidedly was a late

civilizations which had outgrown the magic and mythological foundations of the "animal style." The mental background of the "animal style" is not uncovered completely by the three interpretations detailed here.

[36] A contribution of Persian mythology to the "animal style" is analyzed keenly by M. Rostovzeff, "Some New Aspects of Iranian Art," *Seminarium Kondakovianum* (Prague), VI, (1933), 161–86 (with references on other mythological interpretations).

[37] W. Born, "Fetisch, Amulett und Talisman," *Ciba-Zeitschr.*, IV (1937), No. 47, 1610–12, 1621–22.

[38] I. G. Anderson, "Hunting Magic in the Animal Style," *Mus. Far Eastern Antiquities, Stockholm, Bull.*, No. 4 (1932), 221–317; A. M. Tallgren, "Zum Ursprungsgebiet des sogenannten skythischen Tierstils," *Acta Archeologica,* IV (1933), 260, 262.

[39] A. Salmony, "Siberian Animal Art of 600 to 800 A.D.," *Illustrated London News,* 1936, p. 1073.

[40] V. Smith, *A History of Fine Art in India and Ceylon* (Oxford, 1911), pp. 422–23, Pl. 98, Figs. 9, 10; cf. Born, *op. cit.*, pp. 1623–34: "Astrologische Amulette" (the alchemist Leonhard Thurneisser, 1531–96, made and sold zodiacal amulets).

stage of the ancient "animal style," the priming flasks gained a magic purport; they were expected to give a supernatural support to the marksman. The bullet would be more likely to hit its target if properly directed by mimetic magic.

There are composite animals in Mughal and Hindu miniatures and in Hindu ivory carvings and other products of Indian handicraft. The examples published so far bear no dates and can be dated only approximately.

A Persian miniature of a demon leading a composite horse, attributed to the Herat school and said to date from the second half of the fifteenth century, is now in the Worcester Art Museum. It is similar to a Persian miniature depicting a servant guiding a composite horse, a work assigned to the end of the sixteenth or to the beginning of the seventeenth century. It belonged to the Goloubew collection and is considered justly by Coomaraswamy to be a copy of a lost Indian original.[41] One must consider the earlier miniature a copy of an Indian original too; its hybrid style reveals that the painter did not grasp the meaning of the original.

The earliest Indian original preserved, a Mughal miniature in the Staatliche Museen in Berlin, is attributed to the beginning of the seventeenth century. It illustrates a composite camel driven by a demon; the left ear of the demon is replaced by a horned animal head, and the legs of the camel are composed of animals which emerge from the mouths of each other (*Fig. 15*).[42] Composite representations of fighting elephants also appear.[43]

The Hindu school of Tanjore has produced drawings of animals composed of or emerging from foliage.[44] Groups of dancing girls arranged in the form of an elephant supporting divine or royal riders are represented in Mughal and Rajput miniatures,[45] in clay figures made in Lucknow,[46] in Bengal paintings, and in South Indian ivory carvings.[47] Modern toy figures of

[41] P. B. Cott, "Recent Accessions of Near Eastern Miniature Paintings," *Worcester Art Mus. Ann.*, I (1935–36), 41, Fig. 11; A. K. Coomaraswamy, *Les Miniatures orientales de la collection Goloubew* (Paris and Brussels, 1929), p. 88, No. 73, Pl. 16.

[42] E. Kühnel, *Miniaturmalerei im islamischen Orient* (Berlin, 1923), Pl. 141.

[43] Hendley, "Indian Animals, True and False," Pls. 1*b*, 3*a*, 3*b*, 4*a*, 4*b*, 4*c*, 4*d*; P. W. Schulz, *Die persisch-islamische Buchmalerei* (Leipzig, 1914), Pl. 187; Coomaraswamy, *op. cit.*, Pl. 41; Zykan (*op. cit.*, p. 208. Fig. 5) describes and illustrates an Armenian drawing of a composite animal, now in the library of the monastery, San Lazaro, Venice. The drawing is attributed to the end of the fifteenth or the beginning of the sixteenth century. If this date is right, the drawing antedates the earliest Indian miniature illustration of a composite animal. It cannot be concluded from this example, however, that Armenia has contributed to the development of the motif, either through its own creations or as a connecting link between Persia and India (Zykan suggested Persia as a source of the composite animals in Indian miniatures). The Armenian drawing must be considered a copy of a lost Indian original. The case is similar to that of the contemporary Persian example which is definitely a copy from an Indian original. The earliest Indian illustrations of composite animals or their Persian copies represent a fully developed stage of a complicated iconographical type, and thus we must assume that it was preceded by earlier rudimentary stages of the development. The development cannot have taken place in Armenia, where the composite animal is an isolated phenomenon. In India the composite animal was a popular motif. From this we conclude that it has been developed in India for a long time.

[44] A. K. Coomaraswamy, *Indian Drawings* (London, 1910), I, 29, 30, Fig. 23.

[45] Zykan, *op. cit.*, p. 207.

[46] Hendley, *op. cit.*, p. 80.

[47] G. S. Dutt, "The Indigenous Painters of Bengal," *Journ. Indian Soc. Oriental Art*, I (1933), 24; Goetz, *op. cit.*, pp. 77–86.

jugglers make hand stands on the backs of composite horses. The horses are composed of contorted human bodies.[48]

For some examples there is information as to the meaning of the puzzling compositions; mythological and courtly love games are quoted as being their subject matter. However, such interpretations are of a late date only. The original magic signification of the composite animals repeatedly manifested itself by the addition of a demon as a guide. Obviously, the Mughal painters were conscious of the magic background of the motif in spite of its adaption to illustrate legends and manners. Moreover, an Indian miniature of the eighteenth century, now in the Morgan Library in New York (MS 787), represents "Sol in Leo"; Leo, being a composite animal, is very much like the magic camel illustrated in Figure 15. In this instance the astrological connotation of the miniature is obvious.[49]

It should not be overlooked that the interpretation of natural forms through fanciful images is a phenomenon not limited to the art of the East. Its psychological origin is a kind of creative daydreaming,[50] a diversion of the mind which very likely appealed to Mughal painters, for their art, although realistic in its detailed rendering of the visible world, contained a considerable ingredient of capriciousness and fairy mythology. At any rate, the Mughal miniature painters developed the old motifs into pictorial compositions of a strikingly original and national character. With regard to the popularity of composite animal motifs among Hindu artists, it has been ventured that the belief in the transmigration of souls might provide a key for the phenomenon.[51]

Muhammadan scribes have composed calligraphic emblems (tughras) in the form of animals, and such tughras were often used as amulets. The sphinxlike beast Burāḳ on which the Prophet rode from Mecca to Jerusalem and thence through the seven heavens to the throne of God is represented on Islamic miniatures as a kind of mule or horse with a woman's head; its tail is a woman or has the form of a peacock's tail.[52] The motif of the two antelopes joined together so as to form a head which appears complete when viewed from any direction (see above and *Fig. 4*) is not isolated in the art of India. In the reliefs of the caves of Badami, from the second part of the sixth century A.D., and in other decorative sculptures, there ap-

[48] R. Bleichsteiner, "Kinderspielzeug fremder Völker," *Der Wiener Kunstwanderer,* II, No. 3 (1934), fig. on p. 3. There is a camel made up of different animals in a rather recent Turkish Karagöz shadow figure set. It was published in Sabri Esat Siyavüshgil, "The Karagöz," *La Turquie kemaliste,* No. 30 (Avril, 1930), 36–46.

[49] The Pierpont Morgan Library, *The Animal Kingdom, Illustrated Catalogue of an Exhibition of Manuscript Illuminations, Book Illustrations, Drawings, Cylinder Seals, and Bindings* (New York, 1940), Pl. 3 (Cat. No. 31). Delhi is given as the place of its origin.

[50] For a European parallel case, about contemporary with the earliest eastern miniatures, cf. A. Spitzmüller, "Eine Handzeichnung von Giuseppe Arcimboldo," in *Josef Strzygowski-Festschrift* (Klagenfurt, 1932), pp. 168–70, Figs. 109, 110. A psychological interpretation of a similar phenomenon in "animal interlace" motifs in: W. Born, "Das Tiergeflecht in der nordrussischen Buchmalerei," *Seminarium Kondakovianum* (Prague), VI (1933), 61–67 ("III. Teil 1. Kunstpsychologische Folgerungen").

[51] "Editorial Note," *Journ. Indian Art and Industry,* XVI (1915), 31–32, Pl. 9–13.

[52] C. B. Nath, "Calligraphy," *Journ. Indian Art and Industry,* XVI (1915), 31–32, Pls. 9–13; W. B. (Born), "Amulettbehälter," *Ciba-Zeitschr.,* IV, No. 47 (1937), 1641–42, fig. on p. 1641. T. W. Arnold, *Painting in Islam* (Oxford, 1928), pp. 117–22, Pls. 53–56, 58.

Courtesy, National Museum of Antiquities, Edinburgh

Fig. 1—Priming Flask. Mughal. Edinburgh, National Museum of Antiquities

Courtesy, New York Historical Society

Fig. 2—Two Mughal Priming Flasks and a Seventeenth-Century European Hunting Horn. Dresden, Historisches Museum

Courtesy, New York Historical Society

Fig. 3—Priming Flask. Opposite Side of Figure 2, Right. Drawing by M. Krantz in the New York Historical Society

Courtesy, Metropolitan Museum of Art

Fig. 4

Courtesy, Walters Art Gallery

Fig. 5

Courtesy, Metropolitan Museum of Art

Fig. 6

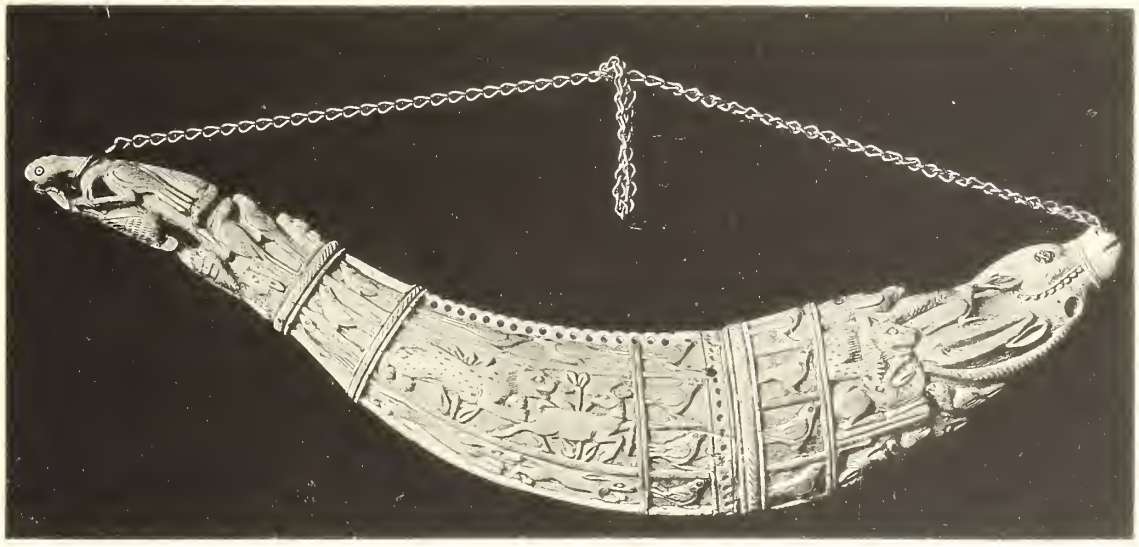
Courtesy, Metropolitan Museum of Art

Fig. 7

Figs. 4–7—Priming Flasks. Mughal

Courtesy, Metropolitan Museum of Art

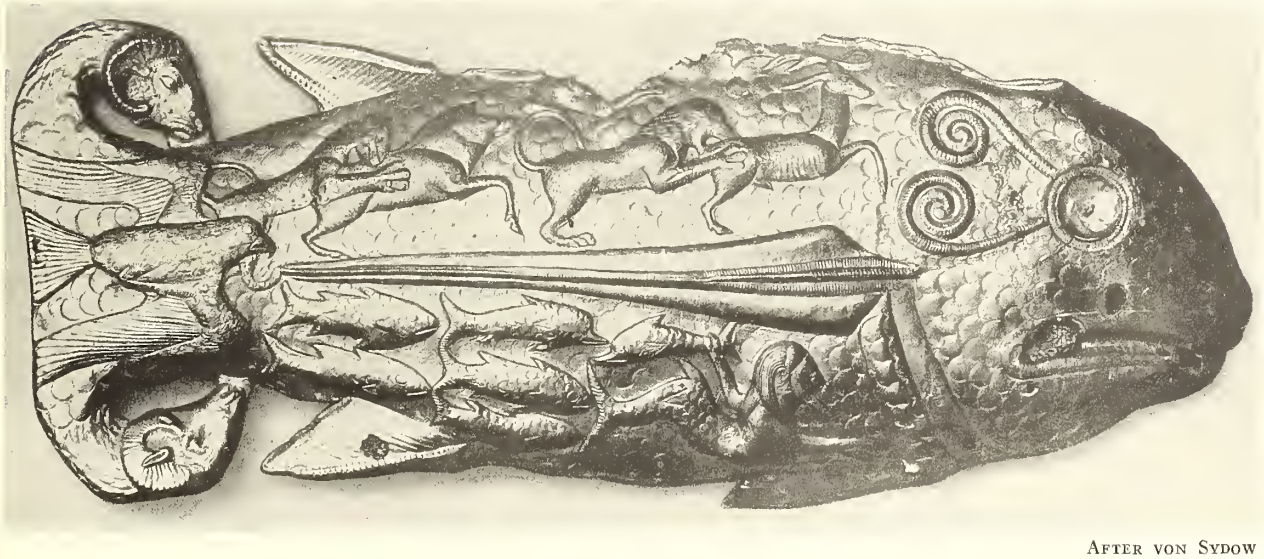
Fig. 8



Courtesy, Metropolitan Museum of Art

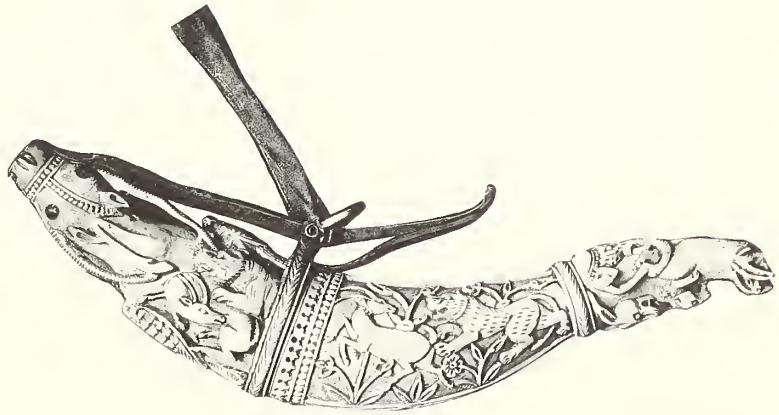
Fig. 9

Figs. 8–9—Priming Flasks. Mughal. New York, Metropolitan Museum



After von Sydow

Fig. 10—Golden Fish. Scythian, Fifth Century b.c. Berlin, Staatliche Museen



Courtesy, Walters Art Gallery

Fig. 11—Priming Flask. Mughal. Baltimore, Walters Art Gallery

Courtesy, Metropolitan Museum of Art

Fig. 12—Priming Flask. Mughal. New York, Metropolitan Museum

After Lord Edgerton of Tatton

Fig. 13—Priming Flask. Gayal Horn. Hindu

After Coomaraswamy

Fig. 14—Stone Makara. Probably Punjab, Third Century B.C.
Boston, Museum of Fine Arts

After Kühnel

Fig. 15—Camel Magic, Miniature. Mughal, *ca.* 1600. Berlin, Staatliche Museen

After Glück and Diez

Fig. 16—Humayun Hunting, from an *Akbar-Nāma* MS Mughal, Second Half of the Sixteenth Century. London, Quaritch Collection

Fig. 18—Detail from a Begram Ivory Casket
Third Century a.d.

Fig. 19—Fragment of a Rug. Indian, *ca.* 1500

pears the motif of "a bull and an elephant facing, with heads so ingeniously combined that a single form fits both animals." [53] This motif shows a distant relationship to the "animal style" of the steppes,[54] but evidently goes back to another traditional motif of two or more animals of one species so arranged that a single head serves equally well for each. A small sculpture combining a bull, elephant, and ram has been found at Mohenjo Daro among ruins of the

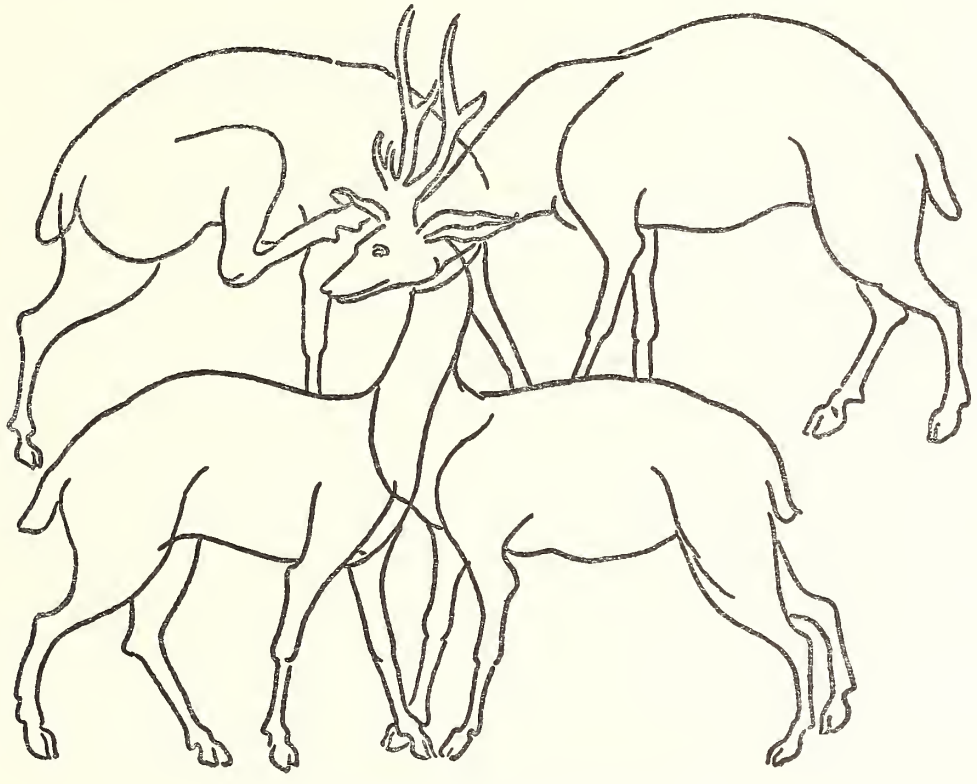


Fig. 17—A Modern Drawing, from Tanjore.

third millennium B.C. The original form of the motif was a solar symbol which consisted of a radiated group of animals having one head in common.

Parallels in the early Mediterranean art include Greek and Etruscan vase paintings of the sixth century B.C.[55] Late Indian examples are to be found in Hindu and Mughal draw-

[53] A. K. Coomaraswamy, "Review of 'Basreliefs of Bādāmi,' by R. D. Banerji," *Journ. Amer. Oriental Soc.*, XLIX (1929), 191–93, Figs. 1–3.

[54] The similarity is mostly superficial, namely, limited to the fact that in both cases animals are merged. The motif of two animals which have one head in common only exceptionally appears in the "animal style" of the steppes. An openwork plaque of the Stockholm Museum is decorated with two eagle-griffons in heraldic grouping, killing an ibex with one head but two bodies. M. Rostovzeff, *The Animal Style in South Russia and China* (Princeton, 1929), pp. 91, 111, Pl. 16, Fig. 1. The execution of the plaque and its counterparts is not clear and shows that the motif is borrowed from another area without being understood by the artist who made it.

[55] A. Roes, "Tierwirbel," *Ipek*, XI (1936–37), 85–105; A. K. Coomaraswamy, "Some Ancient Elements in Indian Decorative Art," *Ostasiatische Zeitschr.*, II

ings. In a Rajput drawing of a radiated group of antelopes the horns are joined together, and the animals are watched by leopards.[56] A modern drawing from Tanjore illustrates four deer with one head in common (*Fig. 17*). The Tanjore school is known for its very old, hieratic traditions. A stone relief which represents the same motif is in cave I at Ajanta; it dates from the first half of the seventh century A.D. and thus forms a connecting link between the ancient and the modern examples.[57]

A cock with a horse's head, a hippalectryon, appeared in the art of Greece during the sixth century B.C. It was considered a Persian motif by Aristophanes. A sun symbol in the form of a cock associated with a horse was known in Persia as parōdash.[58]

Graeco-Phoenician scarabs of the fourth century B.C. decorated with combinations of human and animal heads, animal limbs, and other seemingly incoherent objects were found in the necropolis of Tharros in Sardinia. Because of the remoteness of Sardinia the traits are archaic. The apotropaic motifs are neither indigenous nor are they originally Phoenician.

Achaemenid seals of the same period, from a tomb in Ur, in Mesopotamia, in common with some of the Tharros scarabs, bear a man's profile, the beard of which is formed by a bird; an animal head is attached to the neck, and a bird's head is supported by the hair. Persia must be considered the source of the design of the Tharros intaglios as well as of the Greek hippalectryon.[59]

Hellenistic and Roman intaglios of the first three centuries of our era often have composite motifs of a predominantly zoomorphic character similar to that of Sardinian scarabs and of the Persian seals. They are called grylli, "crickets," allegedly after a term used by Pliny the Elder in his description of grotesque paintings by Antipulos. Some grylli show elephant's heads or trunks among various other elements, a fact which, incidentally, may suggest an Indian influence.

The motifs of the seals from Ur were interpreted tentatively as solar symbols or as gods portrayed with their animal manifestations. However, their seemingly incoherent or puzzling designs are closely related not only to those of the apotropaic Sardinian scarabs but to those of the grylli as well. The latter are combinations of prophylactic and auspicious symbols, including especially those which assure fertility and wealth.[60] In Europe grylli were used as charms as late as the Middle Ages, and even during the eighteenth century their magic meaning was not forgotten.[61] In the lapse of time composite motifs were interpreted in

(1913–14), 383–92, Figs. 1, 2, 4, 5; W. Deonna, "Êtres monstreux à organes communs," *Revue archéol.*, 5e sér., XXXI (1930), 28–73, especially Figs. 5, Nos. 4 and 5; *idem*, "Essai sur la genèse des monstres dans l'art," *Revue des études grecques*, XXVIII (1915), 288–349 (hybrid monsters are considered symbols of superhuman powers).

[56] A. K. Coomaraswamy, *Catalogue of the Indian Collections in the Museum of Fine Arts, Boston, Part V, Rajput Painting* (Cambridge, Mass., 1926), Pl. 60.

[57] Coomaraswamy, *Indian Drawings*, I, 27, Fig. 24; *idem, History of India and Indonesian Art*, II, Pl. 2, Fig. 7.

[58] P. Ackerman, "Some Problems of Early Iconography," in *A Survey of Persian Art*, ed. by A. U. Pope and P. Ackerman (London and New York, 1938), I, 861.

[59] A. Roes, "New Light on the 'Grylli'," *Journ. Hellenic Studies*, LV (1935), 232–35.

[60] A. Furtwängler, *Die antiken Gemmen* (Leipzig and Berlin, 1900), V, III, 113, 114, 288, 298, 353, 363.

[61] A. Blanchet, "Recherches sur les 'grylles'," *Revue des études anciennes*, XXIII (1921), 43–51.

various ways; the mythological elements which they contained conveyed a more or less clear meaning. One might conclude, however, from the magic character of the later grylli, that the Persian seals served as charms from the very beginning and that their mythological elements were secondary to their magic use.

It was stated above that magic has contributed to the development of the "animal style" of the steppes and that various utensils and weapons were decorated in the "animal style," in order to bestow the character of a charm on them. Indirectly, the grylli originate from zoomorphic motifs of the "animal style." There are Scythian gold plaques on which the profile of a goddess is coupled with a lion's head.[62] The plaques are less complex than the Persian seals, but the way in which the lion's head is attached to the neck of the human head strikingly recalls the Persian seals. It is well known that Persian elements can be traced in Scythian art, but it cannot be concluded from this observation that the composite design of the Scythian gold plaques was derived from Persian prototypes. On the contrary, motifs of the "animal style" must have stimulated the development of the composite motifs in the glyptic art of Persia. The irrational character of the composite design is foreign to the rational style of Achaemenid art, which even in the representation of hybrid animals strives for a convincing rendering of imaginary creatures. The art of Persia included a stratum of the "animal style" that was closer to the art of the Scythians and other nomads than to the imperial art of the Achaemenid court and to the urban art dependent upon it, namely, the art of Luristan, which antedated the rise of the Achaemenids by hundreds of years. In the bronzes of Luristan one finds combinations of human masks and of animal fragments. The arms, bridle bits, and other bronze articles of Luristan are decorated with prophylactic figures. Often a personage has traits of the mythical heroes Gilgamesh and Enkidu. The two Babylonian characters were combined in the art of Luristan. Gilgamesh and Enkidu were associated with lions on finials of standards that probably served religious purposes. The standards are attributed to the sixth century B.C.

Gradually, the figures disintegrated into decorative elements. Isolated heads that are substitutes for Gilgamesh and Enkidu, ibex heads with curved horns, and lions or lion protomas form designs which recall Scythian composite motifs both by their arrangement and by their style.[63] Human heads, horned animal heads, and protomas of beasts of prey also form constituent parts of the grylli.

The stratum of the "animal style," of which the Luristan bronzes are significant examples in Persia, might well have transmitted composite motifs to the advanced, imperial art of the Achaemenid dynasty. Seal cutters trained in this style seem to have developed the composite motifs of their intaglios from prototypes from the stratum of the "animal style." In the West, seals and other works of art were imported from Persia. During classical antiquity and in the Middle Ages, the Near East was considered the home of magic. Magic

[62] E. H. Minns, *Scythians and Greeks* (Cambridge, 1913), p. 158, Fig. 45.

[63] R. Dussaud, "The Bronzes of Luristan," in *A Survey of Persian Art*, ed. by A. U. Pope and P. Ackerman (London and New York, 1938), I, 258, 261, 263.

formulae and charms of the Orient were held in the highest esteem. Persian seals decorated with magic designs were imitated eagerly, and they stimulated the development of intaglio charms in Mediterranean countries.

The grylli not only are related to the "animal style" which preceded them, but they have justly been compared with the "composite animals" of the Mughal period in India. J. Zykan has ventured to state that invasions of Scythians (the Sakas of Indian historic accounts) might have spread composite animal motifs in the art of India.[64] After Alexander the Great had conquered northwest India, this area remained under a Greek overlordship for almost two hundred years. The historic facts which underlie the development of the fine arts in northern India during the next period were summed up by Grousset:

> The Greeks were expelled, first from Bactria, about 135 B.C., and afterwards from their Indian possessions, between 75 and 58 B.C., by various Scythian peoples who descended upon them from Central Asia. The chief of these peoples, known to the Romans in later days by the name of Indo-Scythians (called by the Chinese Yue-chi), founded a great empire in eastern Iran and north-west India, which the Indians called the Empire of the Kūshāns (Kūshāṇa) from the name of the reigning dynasty. The Kūshān emperors, the most famous of whom was Kanishka, held northern India under their domination during the second half of the first century and the whole of the second century of our era. But the seat of their power was still the former Greek kingdom, the more or less Hellenized land of Gandhạrā and the Punjāb.[65]

In the Peshawar Museum there is a gold openwork armlet decorated with conventionalized lions biting each other's tails.[66] Originally, the armlet was inlaid with stones. The reversed curves of the outlines of the lions, the restless movement of the design, and the inlay technique suggest a date in the period of the Sarmatians. This has been called the "new animal style" by Rostovzeff, and it lasted from about 300 B.C. to the beginning of our era. The origin of the armlet is unknown, but it has been attributed tentatively to the Transoxanian art of the third century B.C.[67]

The Peshawar armlet so far is without a parallel among Indian objects of its period, but it supports Zykan's assumption that the "animal style" was introduced into north India by the Sakas. Recently, the late J. Hackin and Mme J. R. Hackin have examined the currents of art which met in Afghanistan during the Kushan period (first to third centuries A.D.). In 1937 they discovered an ivory casket with both grylli and other composite motifs of a zoomorphic character similar to those of the Scythian "animal style" (*Fig. 18*). The casket was excavated at Begram in Afghanistan and dates from about 300 A.D. Its figural design carried out as "sunken relief" has, within an incised frame,[68] continuous tendrils which spring from the mouths of grylli and elephant heads; the latter are elements of a complicated zoomorphic

[64] Zykan, *op. cit.*, p. 211.

[65] R. Grousset, *The Civilizations of the East, II, India* (New York, 1931), p. 108.

[66] Rostovzeff, *op. cit.*, pp. 84, 109, Pl. 18, Fig. 5.

[67] A. Koch, "Aussergermanisches der Sammlung v. Diergardt," *Ostasiatische Zeitschr.*, XXIII (1937), 227–31.

[68] Hackin and Hackin, *op. cit.*, pp. 20–23, 87–91, pls., Figs. 181, 183, 184.

design in the corners of the border. In a similar manner tendrils and foliage motifs spring from the mouths of makaras in Hindu sculptures; they symbolize the creative part played by the element of the water, which is represented by its spirit, the makara.[69]

In the Begram grylli human heads are crowned by horse and tiger heads. They are patterned after Hellenistic or Roman models. One of the grylli is supported by a dove, which in turn is connected with an intricate composite animal design. The main feature of this design is a sea elephant (jalebha), a mythical monster closely related to the makara. The visible wing of the dove turns into the tail of the jalebha, the trunk of which ends in a bird's head (possibly that of a peacock). This motif recalls the birds' heads which frequently form the ends of horns and feet of deer and other quadrupeds in Scythian art. The heads of two smaller sea elephants, one turning to the right, the other to the left, spring from the shoulders of the jalebha and merge into its design. The way in which the two small animals are included in the body of the large jalebha recalls the composite animals of Mughal miniatures reviewed above. From the twisted tail of the large jalebha springs the head of a makara which obliterates the lower part of an angle of the border.

The jalebha design is a genuine composite animal, for small animals fill the outline of the large animal. The grylli do not fit this definition; they are loosely joined configurations of zoomorphic elements. In opposition to the jalebha motif, which was developed directly from the "animal style" of the steppes, the grylli were imported by the Greeks with other Hellenistic elements. The grylli, however, were purposely combined with the jalebha motif on the Begram casket; their fundamental similarity was apparent, and an ensuing development would have completed the fusion of the motifs.

The bodies of the mythical animals that decorate ivory plaques found at Begram have reverse curved outlines like those of the animals of the Sarmate period of the "animal style."[70] This observation supports my explanation of the appearance of composite animals on the Begram casket; namely, an influence exercised by the "animal style" of the steppes which was introduced by the Sakas. The animals which were popular with the Scythians were replaced by the jalebha and the makara, two legendary animals taken from Hindu mythology. The jalebha and the makara in turn show traits of two animals typical of India, the elephant and the crocodile. In Afghanistan the "animal style" of the steppes was indianized. The artistic result of the development recalls that of a parallel development in north Europe. The jalebha motif of the Begram casket includes elongated animal limbs which are interlaced. On the other hand, Scandinavia developed its animal interlacement from Scythian motifs during the early Middle Ages.

It has been stated above that a direct connecting link between the form of the Maurya makara in the Boston Museum and the ivory powder primers of the Mughal period is missing, but it has been suggested that a succession of objects made of a perishable material might have

[69] Coomaraswamy, "Yakṣas, Pt. II," p. 13.

[70] Hackin and Hackin, *op. cit.*, pp. 74, 75, pls., Figs. 113–15. Hackin compared the plaques illustrated by him to the armlet reproduced by Rostovzeff and quoted in footnote 66, and with a similar object, illustrated in Koch, *op. cit.*, pp. 227–31, Pls. 34, 35.

preserved the ancient design. The further development of the composite animal in India cannot be traced. The Begram example is the only proof of an early adoption of the composite animal in India. There are, however, some fragments of Indian rugs decorated with zoomorphic motifs; in spite of their late origin they support my theory. The fragment in the Jeuniette collection in Paris (*Fig. 19*) and its counterparts are of fine workmanship and date from about 1500.[71] No Indian rugs of an earlier origin are known. The carpet fragment is decorated with fanciful animals, each animal proceeding from the mouth of another. A quadruped emerges from the mouth of a fish-tailed monster; the head of an antelope, supported by a snakelike neck, emerges from the mouth of a lion's head springing from a mask. Toads and elephant protomas also appear.

A running leopard with a collar around its neck seems, because of its naturalistic execution, to be a foreign element, but from its mouth come forth odd creatures whose elongated and twisted bodies end in geese heads. One recognizes motifs used in both the Begram casket and the Mughal powder flasks. The rug antedates the earliest powder flasks by about a century and is evidence that their particular animal motifs were not restricted to ivory carving but also appeared as textile designs. This observation reveals one of the ways in which the "animal style" might have reached craftsmen of a period as late as the seventeenth century. Textiles have often preserved ancient designs over surprisingly long periods. It is well known, from the excavations in Noin-Ula in northern Mongolia, that in the first century B.C. textiles were decorated in the "animal style."[72] Objects of wood and other materials might have played a part similar to that played by textiles in the development. The painters of the Mughal period obviously used the same, or similar, sources as did the ivory carvers. This explains the resemblance of details of the miniatures illustrating composite animals to the animal motifs on the ivory priming flasks. The reliefs decorating the surface of the ivory primers have no fanciful distortions, and by their illustrative character they indicate that realistic pictures might have served as their models.

In a miniature of the London copy of the *Ā'īn-i-Akbarī*, which portrays the emperor hunting in the neighborhood of Agra in 1568, a cheetah is to be seen pursuing antelopes.[73] The group is almost exactly copied in reverse on an ivory priming flask in the Metropolitan Museum, New York (*Fig. 7*). The pursuing animal is characterized as a cheetah by its collar. The same is true of the upper animal which bites the neck of a deer in the relief of another priming flask in the Metropolitan Museum (*Fig. 8*).

Hunting with tamed leopards was an old sport in India, and under the Mughals it was highly developed. The *Ā'īn-i-Akbarī* contains a detailed account of the hunting methods in Akbar's time which is corroborated by pictorial representations. The cheetah, "the maneless hunting leopard (*Cynailarus cynofelis*) is a highly specialized cat which was formerly widely

[71] F. Sarre und F. R. Martin, *Die Ausstellung von Meisterwerken Mohammedanischer Kunst in München, 1910* (Munich, 1912), I, Pl. 84, Cat. No. 181; W. Bode and E. Kühnel, *Antique Rugs from the Near East* (New York, 1922), p. 33, Fig. 49.

[72] G. Boroffka, "Kunstgewerbe der Skythen," in Bossert, *op. cit.*, I, 150, Pl. XI.

[73] Hendley, "Sport in Indian Art," Pl. 4.

distributed in Northern India south of the Ganges from Bengal to Rajputana, the Punjab, and Sind, also in Central India and the northern part of the Deccan, but is now almost extinct. When taken out for the chase the cheetah was hooded, after the manner of a hawk, and driven on a low bullock-cart as near as possible to the antelope, slipped from the cart, and either went headlong at the herd, if near enough, or stalked it, making use of any cover nearby, until within rushing distance . . . ." Thanks to its exceptional speed "the cheetah often overtakes the rearmost of the herd, which gets under way the moment it perceives the cheetah approaching. The victim . . . . is usually apparently struck by the throat, to which the cheetah holds on until enticed to let go by the offer of a ladle of blood taken by one of the men from the antelope's arteries . . . ." [74]

The miniature painters of the Mughal court depicted various aspects of hunting with cheetahs, including illustrations of the use of bullock carts in which the hunting leopards were kept and the moment when the cheetah holds to its victim (*Fig. 16*). Similar motifs are to be seen on Indian lacquer bindings of the sixteenth and the seventeenth centuries and on rugs, as illustrated by a seventeenth-century Indian rug now in the Museum of Fine Arts in Boston.[75] The naturalistic leopard of the rug fragment in the Jeuniette collection (*Fig. 19*) must be derived from the same source as that of the Boston rug, namely, from a miniature or a larger painting.

In the relief of one of the powder primers in the Metropolitan Museum (*Fig. 9*), a beast of prey, resembling a tiger and apparently wearing a collar, pursues an antelope. Trained tigers and lions are said to have been used in India to hunt buffalo and boar, and it is suggested that this custom was inherited from the Persians and Assyrians.[76] In the relief of a priming flask in the Walters Art Gallery, Baltimore (*Fig. 11*), a goat wears a collar and is pursued by a beast of prey, probably a lioness. Whether or not the goat was used as a bait to train a lioness cannot be decided. As a matter of fact, the use of such animals for hunting purposes seems not to be established positively. "Birds of prey," however, "were used for catching partridges, cranes, hares, and even it is said for hunting antelopes, on which they pounce with violence, beating their heads and blinding them with their wings and claws." [77] On the Dresden priming flasks (*Fig. 2*, left and right, and *Fig. 3*) are scenes illustrating the hunting of small birds with birds of prey, among other subjects, and the relief of one of the priming flasks in the Metropolitan Museum was set apart entirely for the representation of birds in a landscape; the latter is symbolized by single plants (*Fig. 12*). The birds probably depict hawks or falcons. To be sure, they cannot be classified exactly, for they are stripped of their characteristics by the carver. Obviously, the ivory carvers generally reduced to simplicity the intricate miniatures which served as models for their work. The animals in the relief of the Edinburgh priming flask (*Fig. 1*) might be interpreted as a cheetah waiting in an ambush, a resting antelope, and a hawk hovering above to locate the game.

[74] R. I. Pocock, *Mammalia, The Fauna of British India* (London, 1939), I 320; 326, 328–29.

[75] Bode and Kühnel, *op. cit.*, p. 33, Fig. 51.

[76] Anderson, *op. cit.*, p. 305.

[77] Hendley, *op. cit.*, p. 60.

Processions of hunting animals were held at the court of the Emperor Aurangzeb, according to the French physician, François Bernier, who traveled in India from 1656 to 1668.[78] A high relief on the lower end of one of the priming flasks in the Metropolitan Museum (*Fig. 8*) and a low relief of a container which is preserved, without its lid, in London seem to illustrate such processions.[79]

On one of the Dresden priming flasks a European and an Indian are to be seen bargaining for a bird (*Fig. 2*, right, and *Fig. 3*). This motif recalls the rather frequent portrayals of Europeans in Mughal miniatures. Only exceptionally the immediate models of the ivory reliefs of the priming flasks can be located, but the general character does not leave any doubt about their dependence upon Mughal paintings. Thus, the ivory primers are definitely determined to be of Mughal workmanship, a statement which is supported by the frequent use of elephants in the decoration. Incidentally, the elephants are unmistakably of Indian design.

It is known that in 1658 the Dresden priming flasks came into the collection of Prince Elector Johann Georg II of Saxony. This is a date *post quem non*. Incidentally, the use of the human figure in the decoration of one of them (*Fig. 3*) shows that figural reliefs preceded statues in the history of Mughal ivory carving by about a century. The parallel which can be traced between the relief illustrated in Figure 7 and a miniature from the end of the sixteenth century in the *Ā'īn-i-Akbarī* suggests that ivory carved priming flasks of the type described here were made possibly as early as the end of the sixteenth century. Probably the latest of them date from the second half of the eighteenth century. From this time on European influence increased to such an extent that the archaic "animal style" of the priming flasks must have appeared obsolete to the Mughal patrons of the ivory carvers.

The style of the Mughal priming flasks does not present a clear evolution. With the lapse of time, however, a change in their style must have taken place. The change is obliterated only by the continual repetition of early types at a time when more advanced ones have already been evolved, a custom typical of the East. The earliest stage was characterized by a rectangular framework which separated the naturalistic reliefs from the conventionalized sculptures in the round (*Fig. 9*). In the latest stage reliefs and sculptures in the round merged into a complex and irregular whole (*Fig. 8*). The development corresponds to the evolution of a "tectonic" into an "atectonic" style, which Wölfflin made evident in his analysis of European Renaissance and Baroque art.[80]

A comparison between the relief representations of animals in the priming flasks and those of medieval oliphants presents itself. Oliphants were made, especially from the tenth to the twelfth centuries, in the Mediterranean area. They differ in their ornamentation according to their origin. There are Fatimid-Egyptian, Saracenic-Sicilian, and Byzantine horns.

[78] *Ibid.*

[79] M. H. Longhurst, *Victoria and Albert Museum, Department of Architecture and Sculpture, Catalogue of Carvings in Ivory* (London, 1929), Pt. II, Nos. 382–1896. The museum owns two more ivory priming flasks: Nos. 382a–1896 and 824–1889. All are labeled Persian, but are doubtless Indian.

[80] H. Wölfflin, *Principles of Art History* (New York, 1932), pp. 124–54.

A Byzantine horn of the tenth or eleventh century in the British Museum [81] shows hunting scenes in an allegedly "confused" arrangement which is nothing else but the principle of the allover pattern familiar to the East and recurring in the ivory powder primers as well as in the marginal decorations of Mughal manuscripts and on animal carpets of the Mughal period, to quote only examples connected with the subject treated here. Obviously, the decoration of the London oliphant and of similar articles is influenced by the same Eastern tradition which has contributed decisively to the formation of the Mughal priming flasks.

CONCLUSION

Fish-shaped ivory priming flasks decorated with animal carvings were made in the Mughal period in India from the end of the sixteenth century until the end of the eighteenth century. They include two strata of Indian art fused together. The first stratum is represented by strongly conventionalized zoomorphic motifs which go back to the "animal style" of the steppes and to Hindu iconography. The second stratum is represented by more naturalistic hunting scenes, taken from contemporary Mughal miniatures. The archaic animal decoration gave the character of a charm to the priming flasks.[82]

[81] O. von Falke, "Elfenbeinhörner, II," *Pantheon,* V (1930), 40, Fig. 3.

[82] There is a similar phenomenon in Russian illuminated manuscripts of the fourteenth century. In the school of Novgorod a design of title pages was developed in which the outline of a domed church is filled with interlaced animals. The animal decoration was introduced into Russia by the Scandinavian settlers in the eighth century and had survived in woodcarvings which have perished. It was taken over by scribes who believed in the magic power traditionally attributed to the Scandinavian "animal style"; it was supposed to protect the book and its reader from evil spirits. Two religious strata, Christianity and paganism, were mixed in Russia at the end of the Middle Ages. Cf. Born, "Das Tiergeflecht in der nordrussischen Buchmalerei," V (1932), VI (1933), VII (1935), especially VI, 98–106.

PAINTING IN THE FATIMID PERIOD: A RECONSTRUCTION*

BY RICHARD ETTINGHAUSEN

A SURVEY OF THE ARTS IN ISLAMIC COUNTRIES PRESENTS A PECULIAR SITUATION AS FAR AS painting is concerned. There are frescoes of the early eighth century from Ḳuṣair ʿAmra, some from Nishapur, which cannot be later than the beginning of the ninth century, and others from Samarra only a few decades later. Subsequently, there is a gap from these to the thirteenth-century manuscripts from Iraq, Mesopotamia, and Syria. From about 1300 on, Iranian manuscripts are preserved, and a few fragmentary frescoes date from before the Mongol invasion. From Egypt there are supposedly only a few paper fragments of the ninth or tenth century. This is all the more curious as the Fatimid court in Egypt was not only one of the most luxurious in the Islamic East, but also definitely fond of figural representations. This is known from carvings in wood and ivory.

Literary references, too, seem to point to the existence of representational art in Egypt. The second Tulunid ruler, Khumārawaih (884–96), displayed in his palace painted wooden statues representing himself, his harem, and singing girls.[1] Later on, the Fatimid caliph al-Āmir bi-Aḥkām Allāh (1101–30) had the portraits of various poets painted in the arches of his belvedere.[2] The most illuminating account is contained in Maḳrīzī's *Khiṭaṭ*.[3] According

* Paper read on January 29, 1941, at the annual meeting of the College Art Association in Chicago, Illinois.

[1] Maḳrīzī, *Khiṭaṭ* (Bulaq, 1270 H. [1853 A.D.]), I, 316. A verbatim translation of this passage in *idem, Description historique et topographique de l'Égypte,* trans. by P. Casanova (*Mém. Inst. Fr. d'Arch. Or.,* III [Cairo, 1906], 216–17). This passage is also referred to in A. F. von Schack, *Poesie und Kunst der Araber in Spanien und Sicilien* (Berlin, 1865), II, 166.

[2] Maḳrīzī, *Khiṭaṭ,* pp. 486–87. This passage is referred to in von Schack, *op. cit.,* 168; A. Pavlovskij, "Décoration des plafonds de la Chapelle Palatine," *Byzantinische Zeitschr.,* II (1893), 369; and T. W. Arnold and A. Grohmann, *The Islamic Book* (Leipzig, 1929), p. 1. As it has been only paraphrased, a full translation is given here: "They had a belvedere (look-out) which overlooked the 'Pool of the Abyssinians.' The Sharif Abu Abd Allah Muhammad al-Djuwānī says in the book *Al-Nuḳaṭ ʿalā 'l-Khiṭaṭ* ("Points Above the Outlines") that the Caliph al-Āmir bi-Aḥkām Allāh built on the belvedere called 'The Well of the Bench of the Tent,' another belvedere of painted wood in which were arches looking down on the greenness of the 'Pool of the Abyssinians.' In it the poets were depicted, each poet and his town. Of every single one of them, he (the caliph) cited a piece of laudatory poetry mentioning 'The Tents,' and he wrote this next to the head of each poet. Adjoining the picture of each of them was a delicate gilded shelf. After al-Āmir had entered and read the poems, he ordered that a sealed purse with fifty dinars in it should be placed on each shelf and that every poet should enter and take his purse in his hand. They did this and took their purses. And there were a number of poets." This translation and the one given in footnote 37 were kindly checked by Professor W. H. Worrell.

[3] Maḳrīzī, *op. cit.,* II, 318. The verbatim translation of this passage is given in T. W. Arnold, *Painting in Islam* (Oxford, 1928), p. 22. The passage is also referred to in von Schack, *op. cit.,* II, 167–68; Pavlovskij, *op. cit.,* p. 370; and Arnold and Grohmann, *op. cit.,* p. 1. The story of the rivalry of al-Ḳaṣīr (or al-Ḳuṣair, as he is called by Grohmann) and Ibn ʿAzīz is followed by a short account of a painting by al-Kutāmī, illustrating "Joseph in the Pit," but it does not state whether the painter lived in the Fatimid period or not.

The various anecdotes of Maḳrīzī, though indicating the high level of painting in the Fatimid period and at the Fatimid court, are only tidbits of information, as the author must have presented much more in his book, now lost, on the "Classes of Painters" (Ṭabaḳāt al-Muṣawwirīn), entitled *The Light of the Lamp and the Politeness of the Seated Ones in Respect of the Annals of the Artists* ("Ḍaw' al-Nibrās wa-Uns al-Djullās fī Akhbār al-Muzawwiḳīn"), cf. Maḳrīzi, *op. cit.,* p. 318.

to it, an artistic competition between the painters al-Ḳaṣīr, apparently an Egyptian or at least a resident of Egypt, and Ibn 'Azīz, who was called to that country from Iraq, took place at the instigation of Yāzūrī, who was vizier of the Fatimid caliph Mustanṣir between 1050 and 1058. Ibn 'Azīz painted a dancing girl in a niche in such a way that a spectator thought she was coming out of the wall. He created this effect by giving her a red dress and by painting the niche yellow. His competitor, al-Ḳaṣīr, pictured the dancing girl as if she were entering the niche, painting her white against black. The contemporary connoisseurs judged the problem and the solution of al-Ḳaṣīr more difficult than those of his rival. A number of facts can be deduced from this story, which seems to have some historical significance. The style apparently is mainly coloristic. Movement was not dependent upon an understanding of linear perspective and space forms. Finally, an eleventh-century Egyptian painting proved to be in the same style as an Iraqian one, but was thought to be superior to it. As the painters are, in Maḳrīzī's account, compared with the great calligraphers Ibn Muḳla and al-Bawwāb, one can also learn by inference that the painters were highly respected.[4]

That Egyptian art in the tenth century was influenced by Iraq is well known. This, together with Maḳrīzī's reference pointing to a possible relationship in the field of painting, leads automatically to a comparison of the sole surviving paintings in Iraq, the frescoes of Samarra, with whatever may have been preserved of Egyptian painting.

The outstanding and most extensive examples of painting in the Fatimid artistic domain, though not in Egypt itself, are the decorations on the ceiling of the Cappella Palatina in Palermo, ordered by the Norman king Roger II. The style of these paintings, executed in brilliant reds, browns, purples, blues, greens, whites, and golds, is quite different from the the Byzantine mosaics of the same church. The iconography, an occasional Arabic word within the pictures, and the long Arabic formulas of blessing used as framing borders for decorative fields make it obvious that the paintings were executed by Muslims [5] with whom the art of Fatimids still lingered on, though Sicily had been lost to Islam. Unfortunately, no photographs are available for these paintings—the ceiling is very high and the individual scenes are in difficult positions. One must still rely on the old copies published by Terzi and Pavlovskij,[6] which are probably accurate enough in a general way, but do not allow too great a reliance on details.

[4] Another indication of the high esteem enjoyed by artists of figural paintings in the Fatimid period is provided by Maḳrīzī's statement that Ibn 'Azīz was called to Egypt because al-Ḳaṣīr asked such extravagant prices. This illustrates "price cutting by artificially created competition in a popular commodity," if one would use modern terminology.

[5] Pavlovskij gathered all the evidence for a Muslim origin of the Palermo paintings. See also M. Amari, "Epigrafi arabiche della R. Cappella, Soffitto della navata maggiore," in *La Cappella di San Pietro nella Reggia di Palermo,* ed. A. Terzi and others (Palermo, 1873–89), Pt. IV, 5–8.

[6] *Ibid.,* and A. A. Pavlovskij, *Zhīvopīs' Palatinskoĭ Kapelly v Palermo* ("Paintings from the Palatine Chapel in Palermo") (St. Petersburg, 1890). This book was available to me some years ago due to the kindness of Professor A. M. Friend, Jr., of Princeton, but was not at my disposal when this paper was written. A selection of illustrations in Terzi's book and in the article by Pavlovskij mentioned in footnote 2 was recently published by P. B. Cott, *Siculo-Arabic Ivories* (Princeton, 1939), Pls. 67–71; see also R. Ettinghausen and E. Schroeder, *Iranian and Islamic Art, The University Prints* (Newton, 1941), Ser. O, Sec. IV, No. 459. Cott's book reopened the discussion on Fatimid paintings.

A confrontation of several of the Samarra and Palermo paintings shows that basically both are in the same style. "The Dancers" from Samarra (*Fig. 1*),[7] set within a pearl frame, is painted in a monumental formalized fashion and is in perfect balance. The unbroken lines which form the compact bodies contrast with the more elaborate curves and whirls expressing the secondary features, such as the abstract folds or the decorative bands of the dress. The faces of the plastically conceived figures are presented in three-quarter view, the bodies in frontal view, and the feet in profile. The women have very large heads and small feet. Their heavy-set moon-shaped faces are expressionless and show large eyes, slightly crooked noses, and full cheeks and chins. The rich coiffure has scalloped curls across the forehead, spiraled curls in front of the ears, and heavy braids. The bodies are heavy, even clumsy, but this heaviness like all the other anatomical features expresses the Arabic and early Persian ideal of female beauty.[8] The fruit bowl fills an empty, two-dimensional interstice between the figures and has no relation to the undefined three-dimensional space in which the dancers are slowly moving. Only a slightly different aspect is presented by "The Priest" on one of the strange pot paintings (*Fig. 5*). This static figure, also set within a pearl frame, is in the same monumental style. His face and body are in a frontal position, but his feet, which are too small for the rest of his figure, are again placed sidewise. The large facial features, the rigidity of posture, and the sole use of the front plane are alike in this figure and in "The Dancers," but as the priest has an aquiline nose, his appearance is slightly more occidental.

The paintings of the Cappella Palatina have the same formalized, monumental style and, whenever possible, the same rigid symmetry as those of Samarra. Likewise, the plastically conceived figures in the Palermo paintings usually express heavy immobility. The connections between the Samarra and Palermo "Dancers" (*Figs. 1* and *2*) and between "The Priest" and "The Cross-legged Ruler" (*Figs. 5* and *7*) are obvious: the heads of "The Dancer" and "The Ruler" are much too large in proportion to the small feet; the figure of "The Dancer" is given as a compact form which is contrasted with the more vivid secondary lines expressing folds and swinging bands; the scalloped trimming above the right foot recalls a similar feature on the left dancer from Samarra; again the Palermo "Dancer" is set within a pearl band and an object which has no connection with the figure fills the free, otherwise undefined space; similarly, open spaces around "The Psaltery Player" (*Fig. 3*) are filled with objects, one of which, the fruit bowl, is practically a duplicate of the Samarra motif. There are no exact parallels between the picture of "The Two Musicians at a Fountain Head" from Palermo (*Fig. 8*) and scenes in Samarra. From it one can visualize for the first time how a more

[7] All illustrations, descriptions, and analyses of the frescoes from Samarra presented in this article are based on E. Herzfeld, *Die Malereien von Samarra* (Berlin, 1927).

[8] Valuable material for the evaluation of the ideal of female beauty in Arabic poetry and related literature is now collected in I. Lichtenstädter, "Das *Nasīb* der altarabischen *Qaṣīde*," *Islamica*, V(1931), 17–96.

The identity of the Arabic and pre-Mongol Persian ideal of female beauty is demonstrated by the close relation of the faces of "The Dancers" in Samarra and a female head, painted on plaster, of the late eighth or early ninth century from the Metropolitan Museum excavations in Nishapur.

After Herzfeld

Fig. 1—"The Two Dancers." Samarra

After Pavlovskij

Fig. 2—"The Dancer." Palermo

After Pavlovskij

Fig. 3—"The Psaltery Player." Palermo

After Orbeli-Trever

Fig. 4—Detail, Sasanian Bottle. Leningrad, Hermitage

After Herzfeld

Fig. 5—"The Priest." Samarra

After Orbeli-Trever

Fig. 6—Detail, Silver Plate. Leningrad Hermitage

After Pavlovskij

Fig. 7—"The Cross-Legged Ruler." Palermo

After Pavlovskij

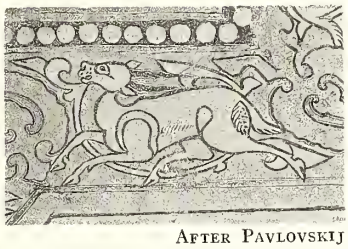
Fig. 8—"Two Musicians at a Fountain." Palermo

After Pavlovskij

Fig. 9—"The Falcon Killing a Duck." Palermo

After Lamm

Fig. 10—Detail, Glass Bottle London, British Museum

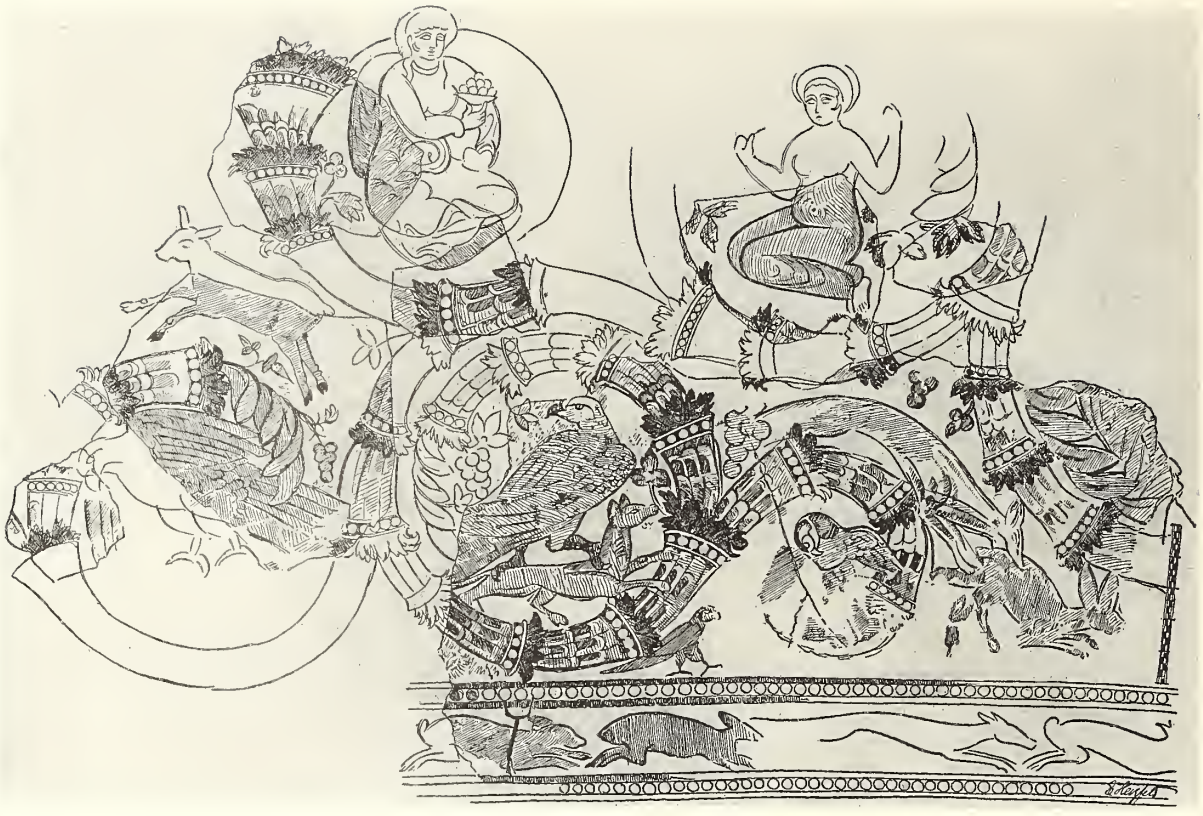


After Pavlovskij

Fig. 11—"The Running Gazelle." Palermo

After Pavlovskij

Fig. 12—"The Two Camel Riders." Palermo



After Herzfeld

Fig. 13—"Cornucopia Scrolls." Samarra

After Pavlovskij

Fig. 14—"The Zither Player." Palermo

After Pavlovskij

Fig. 15—"Addorsed Griffins." Palermo

Courtesy, Herzfeld

Fig. 16—Capital, Ṭāḳ-i-Bustān

Courtesy, Walters Art Gallery

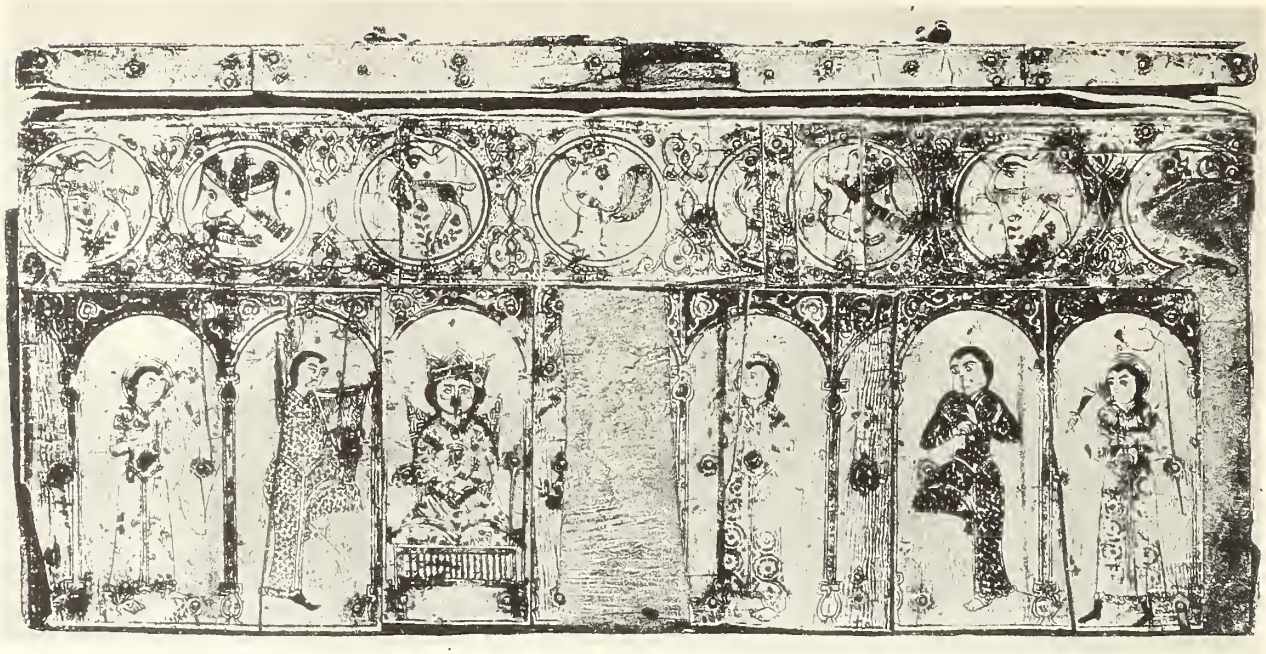
Fig. 17—Detail, Inlaid Bronze Ewer. Baltimore Walters Art Gallery

After Pavlovskij

Fig. 18—"Noah Carrying the Peacock." Palermo

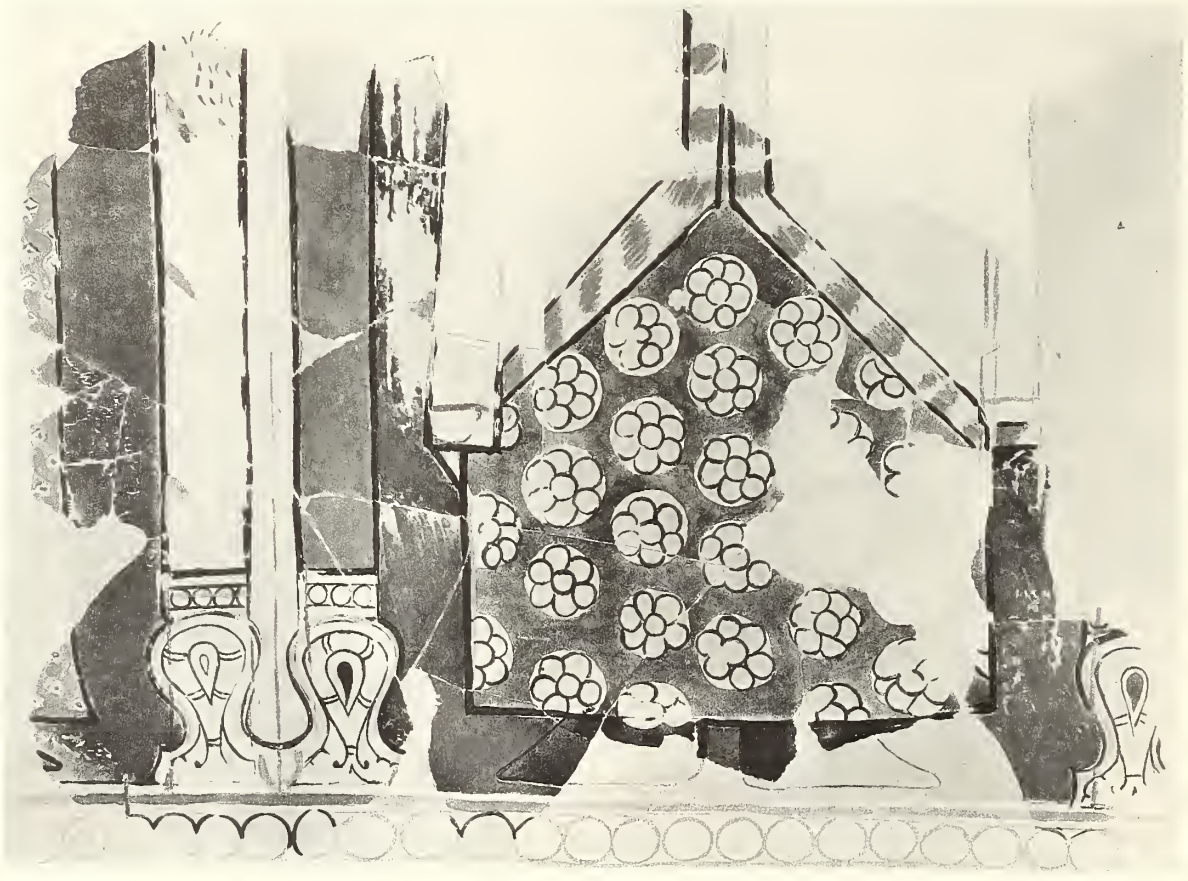
After Zaky M. Hassan

Fig. 19—Luster Bowl. Cairo, Musée Arabe



After Sarre and Martin

Fig. 20—Sicilian Ivory Box. Würzburg, Cathedral



After Herzfeld

Fig. 21—"Men in Arcades." Samarra

complex spatial problem was handled in the Samarra style. The two heads of women looking down from windows in the two upper corners, however, are reminiscent of Samarra. The same applies to the adherence to symmetrical balance and general lack of spatial feeling. This painting is so far as is known the first occurrence of a composition theme frequent in later Islamic miniatures: an action in a courtyard on which women (or men) look down from balconies or windows.[9]

For the animal paintings of Palermo the distinction made by Herzfeld between *malerisch* for the freely moving, naturalistically treated animals and *weberisch* for the highly stylized immobile ones usually set in individual frames and copying textile designs [10] still holds good. "The Running Gazelle" (*Fig. 11*) and "The Falcon Killing a Duck" (*Fig. 9*) are good examples of the same two tendencies in Palermo. On the whole, the first group is limited and rare, and even then the sketchy character and the exaggerated movements are lacking. This type seems to have been influenced by the style of the other group.

These few examples already show that basically the first Fatimid style, as found in Palermo, is like the Perso-Iraqian one in Samarra—a manifestation of East Hellenistic art strongly reflecting Sasanian ideas. To demonstrate this historical dependence would necessitate the reiteration of Herzfeld's analysis of the frescoes of Samarra. Therefore, the confrontation of Figure 4 with Figures 1 and 2 and of Figure 6 with Figure 7 will suffice to demonstrate the point. It may be added that whereas the Persian character of Iraqian painting at the court of the Abbasids is beyond question (this being the reason why the term "Perso-Iraqian" painting is used here) the problem of contemporary painting in Iran proper is still unsolved for lack of material. Some fragmentary frescoes in little niches from Nishapur [11] give support for the assumption that Iran may have had the same style.

There are, however, signs that though the styles of Samarra and Palermo are derivatives of Sasanian painting, changes have taken place between the ninth and the twelfth centuries. While "The Cross-legged Ruler" still follows the archaic static style of Samarra a transformation is noticeable in the more complex body movements of the Palermo "Dancer" when these are compared with the Sasanian and early Abbasid protypes. "The Dancer" looks backward instead of in the direction of the dance; then her legs are shown crossing each other in a more vivid dance step; finally, her arms form a horizontal Z, presenting an inverted parallel movement which replaces a fully balanced parallel position, created by holding the arms in the forms of V's. In this respect the Palermo "Dancer" is closely related to "The Dancer" on the fragmentary gilded glass bottle (now in the British Museum) which, according to a recent investigation, was made for Zangī I, between 1127 and 1146 (*Fig. 10*) and also to "The Dancer" on the celebrated enameled copper dish made between 1114 and 1144 for

[9] F. R. Martin, *The Miniature Painting and Painters of Persia, India and Turkey* (London, 1912), II, Pls. 47, 97B, 99A; L. Binyon, J. V. S. Wilkinson, and B. Gray, *Persian Miniature Painting* (London, 1933), Pls. LX A, LXXXIV A, LXXXVI.

[10] Herzfeld, *op. cit.*, pp. 55–56, 61–62.

[11] W. Hauser, J. M. Upton, and C. K. Wilkinson, "The Īrānian Expedition, 1937. The Museum's Excavations at Nīshāpūr," *Bull. Metropolitan Mus. Art*, XXXIII (1938), No. 11 (sec. II), Fig. 7.

Dā'ūd ibn Sukmān and now in the Ferdinandeum Museum in Innsbruck.[12] This shows that the "Samarra" style was still in use in its homeland at the time when the Palermo ceiling was painted and that it had developed there in the same manner as in the Fatimid domain. Thus, in spite of its age the style had a remarkable endurance and geographical range. But, what is even more important, one can only marvel at the vitality of this style considering that it was possible to instill a more dynamic quality into the age-old measured steps of the Sasanian and Samarra dancers. As the same dance attitude is also present in the enamels of the crown offered by Constantin Monomachos to King Andreas of Hungary and made between 1047 and 1054[13] a possible tie-up with the Byzantine sphere of influence has to be taken into account for this development, though the possible channels are not fully explored. The unique Innsbruck dish might help to explain this development. The design on the glass bottle is more Islamic in appearance than are the designs on the crown and the copper dish, but the Palermo painting, in spite of its stylistic advance, resembles the Samarra fresco more than do the two others.

There are even deeper changes than those noticeable in the movements of "The Dancer." In the picture with "Cornucopia Scrolls" in Samarra (*Fig. 13*), the human figures and animals are of the same importance as the floral framework. Everything is in the same plane even when the wing of a bird or the foot of a duck overlaps the scrolls. Palermo provides the various stages for a further development. Around "The Zither Player" (*Fig. 14*) are the same space filling implements as are found between the Samarra "Dancers"; in addition to them and following a different composition scheme, are small floral branches, only in the vaguest manner reminiscent of "The Cornucopia Scrolls." Some of these branches are behind the stool on which the musician sits, thus indicating two planes, the structure of which is still uncertain. In the picture of "The Running Gazelle" (*Fig. 11*), the position of planes has become clear. The animal is definitely on top of the scrolls and thus, being in the important front plane, is closer to the spectator. The next step is illustrated by the painting of "The Two Camel Riders," in which two large floral spirals emanate from a central stem and fill the whole background (*Fig. 12*). The feeling for spatial depth is, however, counteracted by the fact that the camels set their feet within the scrolls which are supposedly farther back. Therefore, one finds—as in medieval Western art—a superimposition, and at the same time, an interpenetration of planes. Or one might visualize the back plane as being curved, reaching at the bottom (in other cases also at the top) into the front plane, thus presenting the figure of a plano-convex lens in an imaginary cross section. These phenomena occur in many other Palermo paintings. In figural scenes, they are more often found in those of Christian iconography, for which no traditional Iraqian model was at hand.[14] They were thus islamized according to the new principles instead of receiving the traditional space filling objects or the "tree of life." Superimposition and interpenetration of planes have been observed in the eleventh century for both Ghaznavid Iran and Fatimid Egypt and traced further back to the ninth and tenth cen-

[12] L. A. Mayer, "A Glass Bottle of the Atābak Zangī," *Iraq*, VI (1939), 101–2, Figs. 1, 3.

[13] *Ibid.*, Fig. 2.

[14] Compare for instance in Pavlovskij, "Décoration des plafonds de la Chapelle Palatine," figs. on pp. 388 and 404 with those on pp. 383, 384, 386, etc.

turies.[15] As these principles are there applied only to abstract and chiefly floral ornaments, the art of Palermo and with it the art of the Fatimids are the first in which the new experiences have been traced in figural painting. In view of the rather conservative and second-hand character of the Fatimid style, this feature probably occurred at the same time in other figural scenes elsewhere and in a more advanced and original form.

When compared with "The Cornucopia Scrolls," "The Two Camel Riders" does not only show how the scrolls lost their function as framework and became a means of creating a kind of unreal depth, they also demonstrate how much the tendency for abstraction has progressed—a tendency already noticeable in the preponderance of stylized animals over ones which are naturalistically treated. Sasanian art knew landscape symbols of mountains, forests, and swamps, and nature was still occasionally found in the frescoes of Samarra.[16] In Palermo, nature as such has disappeared. This becomes clear when one considers how well some simple landscape symbols would have fitted into the scene of "The Two Camel Riders." But even so, the abstract scroll forms in this picture are not fully integrated with the scene. The tree in the center from which the spirals emanate is obviously a "tree of life" motif, derived from Sasanian and post-Sasanian prototypes (*Figs. 16* and *17*).[17] It necessitates that the two obligatory figures, as in other paintings in Palermo, should face each other or possibly move in opposite directions. Instead of this, they are both moving toward the left. The whole painting actually incorporates two incompatible schemes. The two riders, especially the lady in the howdah, indicate a vague tendency toward realism, which is offset by the unreal character of the scroll background. The figures are composed in a unilateral movement, yet this movement is arrested by the static "tree of life" principle. From this highly conventionalized treatment of nature, it is quite clear that when several decades later a new school of painting in Iraq wished to introduce nature in its miniatures, it had to go to other sources and not to the old Abbasid tradition.

Less important, but also an indication of a stylistic change from the "Samarra" style, is the arabesque character of certain animal designs. In the arabesque, the tip of a leaf does not mean the end of the floral form as it is in nature, because a new stem emanates from this tip and carries other motifs, usually floral or geometric ones. Likewise, the tips of the wings in the two addorsed griffins (*Fig. 15*) turn into stems which carry floral designs that have no relation to the animals. This is in accord with Fatimid art in general, for there are transformations of animal into floral forms in wood carvings of the eleventh century, for instance, in the panel with the two horse protomas in the Musée Arabe.[18] It is the further development

[15] L. Bronstein, "Decorative Woodwork of the Islamic Period," *A Survey of Persian Art,* ed. by A. U. Pope and P. Ackerman (London and New York, 1939), III, 2609–12, which gives an excellent discussion of this problem.

[16] Herzfeld, *op. cit.,* pp. 83–84.

[17] The figures are after a photograph of an early seventh-century capital from Ṭāḳ-i-Bustān, kindly supplied by Professor E. Herzfeld and after another put at my disposal by the Walters Art Gallery, illustrating a detail on a post-Sasanian bronze ewer first published in E. Kühnel, "Die Metallarbeiten," *in* F. R. Martin and F. Sarre, *Meisterwerke Muhammedanischer Kunst* (München, 1912), II, Pl. 130, No. 2985 (formerly F. R. Martin collection).

[18] E. Pauty, *Les Bois sculptés jusqu'à l'époque ayyoubide, Catalogue général du Musée Arabe du Caire* (Le Caire, 1931), Pl. XLII, No. 3391; Ettinghausen and Schroeder, *op. cit.,* No. 462.

of a conventional form in the eighth and ninth centuries, found for example, in the Dādhburzmihr silver plate with the goddess astride a griffin [19] and in the art of Samarra.[20] Here, certain extremities of the animals such as the end of the tail or the head feather take on floral forms which, however, never continue indefinitely, as they are always substitutes for real animal forms.

The Cappella Palatina was finished in the 1140's,[21] this is to say, toward the close of the Fatimid rule in Egypt (which ended in 1171), roughly three hundred years after the Samarra paintings. Judging from the examples discussed in the preceding paragraphs, one can assume that the Perso-Iraqian style persisted in basically the same fashion during the whole Fatimid period. As only a few paintings were recovered in the ephemeral Abbasid capital, the repertory of the Cappella Palatina presents itself as iconographically richer than that of Samarra. Besides the many true Muslim motifs, it contains also some Christian subjects such as scenes showing Samson slaying the lion [22] and of Noah (*Fig. 18*). Furthermore, there are at least two paintings inspired by Norman models showing Western knights hunting or fighting.[23] All these paintings fall outside the scope of true Fatimid painting. It is, however, worth-while noting that the motif of Noah carrying a peacock—according to Genesis VII, 8—goes iconographically back to Egypt as was kindly pointed out to me by K. Weitzmann.[24] The full scene with the patriarch guiding the birds into the ark occurs among the thirteenth-century mosaics of the narthex of San Marco, Venice.[25] It has been shown that this as well as all of the other mosaics of the series was copied from a Greek Bible, perhaps the famous Cotton Bible now in the British Museum (Cotton Otho B. VI), said to have been illuminated in Alexandria in the fifth century, or another manuscript like it from the same (Alexandrian) recension.[26] As the folio of the Cotton Bible containing this Noah miniature was lost even before the manuscript was severely damaged by fire in the eighteenth century, the San Marco fresco is all the more important as showing what the Egyptian iconography of this scene was like. The scene of Noah carrying the peacock occurs twice in Palermo. Once the patriarch is fully bearded and may, therefore, be even closer to the Egyptian prototype.[27]

Before trying to place the only published wall paintings from Fatimid Egypt in proper perspective, it seems opportune to examine the paintings on objects of daily use as a possible secondary source of information.

[19] J. Orbeli and C. Trever, *Orfèvrerie sasanide* (Moscou-Leningrad, 1935), Pl. 22.

[20] Herzfeld, *op. cit.*, Pl. LXXVIII.

[21] M. Amari, "Epigrafi arabiche della R. Cappella, orologio de ruggiero," in *La Cappella di S. Pietro. . . .*, IV, 1; Pavlovskij, *op. cit.*, p. 361.

[22] *Ibid.*, fig. on p. 404.

[23] *Ibid.*, figs. on pp. 369 and 391.

[24] I am greatly indebted to Dr. Weitzmann for making this iconographic identification available to me and for providing me also with all data and references quoted below.

[25] See the colored lithograph in F. Ongania, *Basilica di San Marco* (Venezia, 1880–93), Pl. XVII; C. Diehl, *Manuel d'art byzantin* (2d ed.; Paris, 1926), Fig. 257; see also Alinari photograph No. 13723.

[26] J. J. Tikkanen, "Die Genesismosaiken von San Marco in Venedig und ihr Verhältniss zu den Miniaturen der Cottonbibel . . . ," *Acta Societatis Scientiarium Fennicae*, XVII (Helsingfors, 1891); see also O. Demus, *Die Mosaiken von S. Marco in Venedig* (Wien, 1935).

[27] Pavlovskij, *Zhīvopīs' Palatinskoĭ Kapelly v Palermo*, p. 198, Fig. 85.

There are also Coptic textiles showing a human figure carrying a peacock. I remember having seen one in the Musée Cinquantenaire in Brussels.

A pottery bowl in the Musée Arabe, Cairo, shows a lady with a lute reclining on a couch (*Fig. 19*).[28] The painting is obviously in the Samarra style. The features and the coiffure of the lady, her side curls, and her pigtail are exactly those of the frescoes from the Abbasid capital. The same applies to the lack of spatial conception and to the use of objects to fill the interstices. The way in which the ungainly features of the old woman attendant are set in profile, in contrast to the ordinary three-quarter view for the younger beauties, has also its parallel in Samarra.[29] The main motif is derived from Hellenistic models, just as "The Two Dancers" were, and is transformed in oriental fashion. The links are again similar representations from the Parthian and Sasanian periods.[30] This bowl is evidence that one can rely on the decorative arts to supply clues concerning the style of Fatimid paintings. Unfortunately, most pieces of pottery with figural scenes are nowadays only in a fragmentary state.

Further proof of the importance of the minor arts for this investigation is provided by a painted ivory box in the cathedral of Würzburg (*Fig. 20*).[31] Some of the panels now seem wrongly arranged, but the main subject is clear: an oriental potentate, enthroned and surrounded by his court. Though these paintings are not quite as monumental as those in the Cappella Palatina, the artist has followed the Perso-Iraqian tradition by putting all the figures in the front plane without any indication of space and by presenting the various isocephalic figures, including the king, who is characteristically larger than his attendants, in rigid motionless positions and by depicting the persons either in three-quarter or in frontal view. The arrangement of figures within arcades composed of columns with bell-shaped capitals and bases is another indication of the survival of a Samarra feature (*Fig. 21*).[32] Various other ivory boxes provide figural representations which—as Cott has demonstrated—fit into the scheme of paintings of the Cappella Palatina.

Fragmentary as the preserved pottery is, it yields enough material to provide an understanding of the development of facial types. Figure 22 shows a post-Sasanian face and two others from Samarra in the top line and heads from Fatimid pottery in the second and third lines.[33] There the round, heavy-chinned, fleshy-cheeked face with the glaring dark eyes is still portrayed, but the scale is definitely reduced and more closely approaches the miniature style toward the end of the series. The features become less masklike, they are more mobile and have the appearance of life—in short, they become applicable to book painting. The main characteristics of the coiffure and facial features are, however, retained. With the help of this chart it is possible to establish a hypothetical relative chronology.

[28] The only publication of this piece known to me is Zaky M. Hassan, *Kunūz al-Fāṭimiyīn* (Cairo, 1356 H. [1937 A.D.]), Pl. 27.

[29] Herzfeld, *op. cit.*, Pl. XXXI.

[30] W. van Ingen, *Figurines from Seleucia on the Tigris* (Ann Arbor, 1939), Pls. XLIII–XLV; Herzfeld, *op. cit.*, pp. 38–41, Fig. 24.

[31] E. Kühnel, "Holz und Elfenbein," *in* Martin and Sarre, *op. cit.*, III, Pls. 256–57; Cott, *op. cit.*, Pl. 25, No. 47.

[32] Herzfeld, *op. cit.*, pp. 18–20, Pl. VIII.

[33] The sources of the drawings are Herzfeld, *op. cit.*, Fig. 13 (from the Stroganoff silver plate), Pls. LII and II; Aly Bey Bahgat and F. Massoul, *La Céramique musulmane de l'Égypte* (Le Caire, 1930), Pls. XXXI, No. 5; XXVII, No. 1; XXVI, No. 4; X, No. 4; XIX, No. 2; XIX, No. 3. For a piece analogous to the frontally seen face of "The Priest" from Samarra see Pl. XIX, No. 5 of the same book.

FIG. 22—A SERIES OF FACES

A few wall paintings from a hammam near the sanctuary of Abu 'l-Su'ūd, south of Cairo, were unearthed a few years ago by the Egyptian authorities.[34] The best preserved of the series portrays the figure of a youth in three-quarter view (*Fig. 23*). His face is less monumental than the faces in the Samarra frescoes and closely resembles those on the contemporary pottery (*Fig. 22*). This painting is one of the first in which the facial features of a boy are very effeminate, foreshadowing the usual characterization in later schools of book painting. The pearl frame and the swinging bands contrasting with the compact form of the body betray the Iraqian heritage. The second arcade in the same bathhouse contained another "Drinker," who, as seen from the turn of his head, was painted as a companion piece to the first. This shows that the artist was still following the balanced heraldic scheme which the art of Samarra had taken over from the Sasanians. Two other fragments of faces from the same site do not add anything to these observations. Of additional interest is a niche fragment with two confronted birds on either side of an arabesque composition—the whole framed by a pearl band (*Fig. 24*). There is no doubt that this pair of birds is of Persian derivation and is executed in the textile style. The art of Samarra presents practically the same animals,[35] though not in this composition scheme.

The question arises whether the Fatimids were the first in Egypt to use this Perso-Iraqian style of painting. The decisive influence of the Abassid court on other Egyptian arts is well known. One need only mention the mosque of Ibn Tulun, the ornamental style of his period, or the Iraqian character of the early Fatimid luster pottery. The way in which the first Fatimid Mu'izz imitated the ṭirāz inscriptions of the Abbasid Muṭī'[36] is also proof of the influence of Baghdad and indicates that the Fatimid dynasty continued an existing practice. This can also be demonstrated by a number of figural representations. A tapestry in the Textile Museum of the District of Columbia, depicting a cross-legged young prince (or princess?), is a valuable piece of evidence in this respect (*Fig. 25*).[37] He is given in the same monumental simplified style known from Samarra. He has also other characteristic features such as the large head and the small feet, the strongly stressed eyes, the spiral curls, and a pearl frame. The costume has no indication of folds, only a simple all-over pattern, which is also one of the ways in which the Samarra painters depicted garments. A figural coin of the Abbasid caliph Muḳtadir (908–32) in Berlin,[38] shows the same pose and style as the prince on the tapestry. This textile is probably pre-Fatimid, perhaps ninth to early tenth century.

[34] Hassan, *op. cit.*, Pls. 3–5; G. Wiet, *Exposition d'art persan* (Cairo, 1935), I, 75–76, Nos. P. 1–7, II, Pls. 52–53.

[35] Herzfeld, *op. cit.*, Pl. XLVI, Nos. 11, 13.

[36] Compare for the general style and proportions F. E. Day, "Dated Ṭirāz in the Collection of the University of Michigan," *Ars Islamica,* IV (1937), Fig. 24 with Fig. 20.

[37] First published by E. Riefstahl, *in* J. D. Cooney and E. Riefstahl, *Pagan and Christian Egypt . . . at the Brooklyn Museum* (Brooklyn, 1941), p. 86, No. 271 and fig. This tapestry reminds one of a passage in Maḳrīzī's chapter on the Fatimid treasure houses of carpets and furniture: "He found of the silk curtains which were woven in gold according to the diversity of their colors and lengths a number of hundreds which approached the thousand. On them were pictures of the dynasties and their kings and their famous persons. Over the picture of each of them, on the curtains, was written his name, the number of his days and some comment upon him" (*op. cit.*, I, 417).

[38] Arnold and Grohmann, *op. cit.*, Fig. 6.

In a paper fragment from Egypt, said to be from the early tenth century, a caliph has the same rigid cross-legged position found on the tapestry and coin.[39] Grohmann pointed out that the plain skull cap with brim and two hanging bands at the back of the head occur in the same manner on a coin of the Samarra caliph Mutawakkil.[40]

The Perso-Iraqian style was apparently the predominant one of Fatimid Egypt. There are also others, though they are rather difficult to establish, yet a few documents have been preserved which betray a certain variety of styles. A few fragments of pottery (*Figs. 26–28*) are in a "Hellenistic" miniature style. The bearded face of the man in Figure 28, his bare chest and arm, and the chiton-like shirt of the other figures indicate definitely that the prototype of these paintings is Hellenistic and Byzantine and not Sasanian as in the previously discussed group. In contrast with the "Samarra type" school in Egypt, which has a more monumental style and which depicts only a few persons in a painting or separates a greater number of figures by arcades, this "Hellenistic" school uses figures on a much smaller scale and probably had frequently multifigured scenes which were not necessarily balanced symmetrically. An important fact about these fragments is that their style can be linked with one of the early types of Arabic manuscripts, especially with the *Maḳāmāt* of 1222 in the Bibliothèque Nationale (Ar. 6094) and an early thirteenth-century Bidpai manuscript in the same library (Ar. 3465).[41] A comparison of the faces and of the treatment of garments will make this quite clear (*Fig. 29*). As has been recently shown, there is an obvious, and for this discussion very significant, connection between these manuscripts and the Coptic Gospels of 1180, written in Damietta in the delta of the Nile (Bibliothèque Nationale, MS Copte 13).[42]

A third style might be called "realistic." A paper fragment with "A Cavalier on a Horse, Vigorous in Onslaught," signed by the painter Abū Tamīm Ḥaidara, is thought to be an illustration to a hippological book, or one on military science, of the tenth century.[43] It is difficult to date it precisely. If it should be pre-Fatimid, a pottery fragment with a design of a falconer,[44] small as it is, seems to indicate that this more realistic style continued into the Fatimid period (*Fig. 31*). In both pieces, certain artistic conventions are followed, but in spite of all this, the designs of these pieces are the freest so far discussed.

A "popular" style of painting, unrestrained by rules of a school tradition, is represented by a leaf from Fusṭāṭ recently acquired by the British Museum.[45] It represents a battle of Arabs with knights distinguished as Normans by their helmets with nose guards, their coats of mail, and peculiar shields (*Fig. 30*). Gray has shown that this painting seems to be of the Egypt of the early 1160's. He also pointed out that the color scheme of black, red, and yellow is typical for work in the Coptic style and tradition and, therefore, confirms the assumption of

[39] *Ibid.*, Pl. 4.

[40] *Ibid.*, Fig. 8.

[41] H. Buchthal, "'Hellenistic' Miniatures in Early Islamic Manuscripts," *Ars Islamica*, VII(1940), 125–33.

[42] *Ibid.*, pp. 132–33.

[43] Arnold and Grohmann, *op. cit.*, p. 6 and Fig. 4 (with bibliographies of earlier publications by Karabacek and others).

[44] Bahgat and Massoul, *op. cit.*, Pl. XXIII, No. 3.

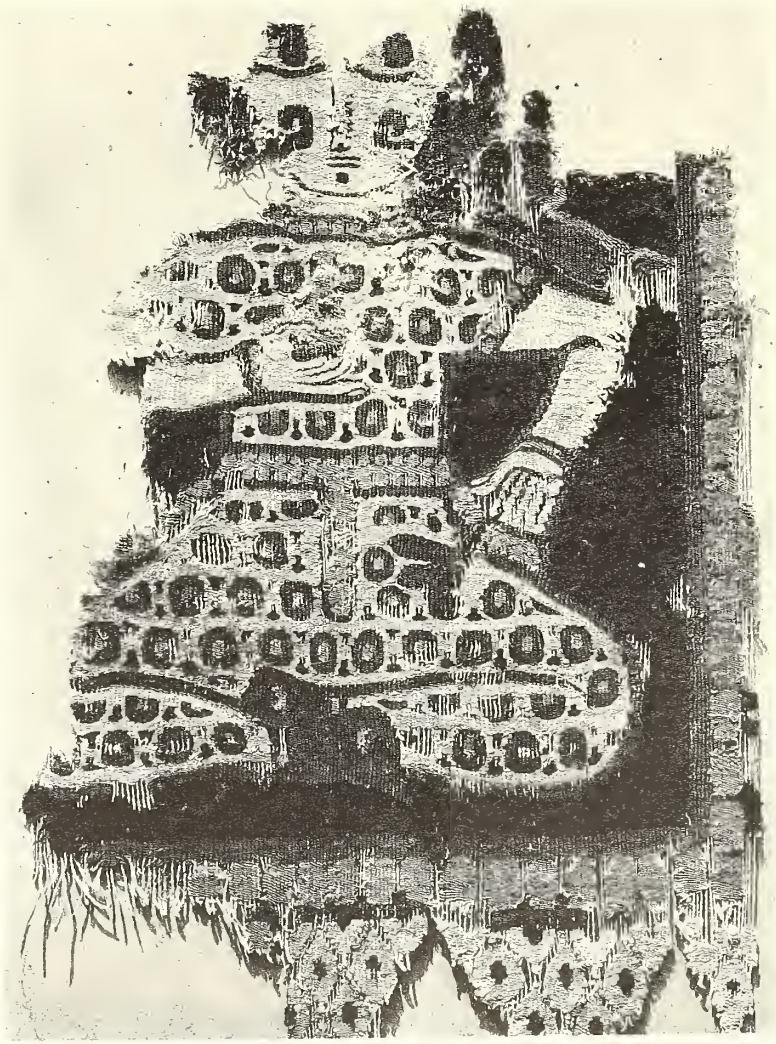
[45] B. Gray, "A Fātimid Drawing," *British Mus. Quart.*, XII (1938), 91–96, Pl. XXXIII.

After Wiet

Fig. 23—"The Drinker"
Cairo, Fatimid Hammam

After Zaky M. Hassan

Fig. 24—"Composition with Birds"
Cairo, Fatimid Hammam



Courtesy, Textile Museum of the District of Columbia

Fig. 25—Tapestry

After Bahgat and Massoul

Figs. 26–28—Fragments of Luster Pottery. Cairo, Musée Arabe

After Buchthal

Fig. 29—Miniature of Ḥarīrī MS of 1222. Paris, Bibl. Nat. Arabe 6094

After Gray

Fig. 30—"Battle Scene." London, British Museum

After Bahgat and Massoul

Figs. 31–32—Fragments of Luster Pottery. Cairo, Musée Arabe

the Egyptian origin of the leaf, which seems never to have been part of a codex. Another example of "popular" painting, also illustrating an historical event, is on a piece of pottery (*Fig. 32*) which [46] likewise does not seem to conform to the "Samarra," "Hellenistic," or "realistic" styles.

Coptic influence in Islamic painting can also be accounted for in a fragment of an erotic manuscript with an amorous scene which Grohmann dated about 900 A.D.[47] The clumsy, square heads, the drawing of the eyes, and the disproportion of the bodies recall Coptic textiles. It can be assumed that more such paintings in Coptic style were executed in the Fatimid period, but they will probably be found only in popular Islamic books and not in more ambitious projects made for the court.

In addition to the paintings made for an Islamic clientele, a number of Christian paintings of the Fatimid period could be cited. In view of the general and restricted character of this survey, these Christian subjects are left out. On the whole, such Christian paintings could be found in any of the groups cited above. It is even uncertain whether or not the pottery fragments given as illustrations for the "Hellenistic" school are Christian. Because, however, of their connections with a number of illuminations of Islamic character (in Ḥarīrī and Bidpai manuscripts) they have been included here.

With all the various styles at our disposal, the question arises, which of them might have been present in the paintings of al-Ḳaṣīr and Ibn ʿAzīz, referred to by Maḳrīzī? Though an answer can only be hypothetical, the most likely style would be the "Perso-Iraqian" one, though it would not be impossible that these masters could have also painted in the "Hellenistic" manner. For the "Perso-Iraqian" style the subject matter of the painting, the strong coloring, the plastic effect, and the identity of the scene in the Egyptian and Iraqian paintings can be adduced. In view of the flat style of the local schools in the "Coptic" and "popular" manners, one can understand the admiration for the more dynamic and coloristically impressive idiom of the two rival painters.

In summing up, one can say that several styles of painting can be assumed for Fatimid Egypt. The main school is a derivative of the Iraqian one as it is known to us from Samarra. It still follows the Sasanian tradition very closely, though certain transformations could be traced. Comparatively little can be said about other styles at this present moment. The "Hellenistic" school shows connections with well-known manuscripts. Supplementing these official types of paintings are what could so far only be vaguely described and labeled as the "realistic" and "popular" trends. The old and indigenous art of Coptic Egypt does not seem to have played an important role, at least in the art of the court or higher Islamic society.

While this short and necessarily hypothetical outline points to a number of schools, it is still premature to define each of them in more than general terms, especially the non-Iraqian ones; it is likewise too early to investigate the development within the single schools, or to try

[46] Bahgat and Massoul, *op. cit.*, Pl. XXXII, No. 5.

[47] Arnold and Grohmann, *op. cit.*, Pl. 2. For stylistic parallels in Coptic book painting see H. Hyvernat, *Album de paléographie copte* (Paris-Rome, 1888), Pls. 16–17 (small figs.).

to evaluate the differences between the various Egyptian and analogous styles in other countries or in other religious groups, be they contemporary or earlier.

There is little doubt that eventually new styles will be added to the above list, just as a thorough search in Egypt and elsewhere will provide many more examples than the few at my disposal. But even with the scant material available the usual hesitancy when speaking of painting in Fatimid Egypt does not any longer seem necessary.[48]

[48] We are decidedly in a better position to understand Fatimid painting than Fatimid book illumination, especially of Korans. Our most extensive clues to ornamental designs in books of that important period are still provided by the Hebrew manuscripts from the Genizah in Cairo (V. Stassof and D. Gunzburg, *L'Ornement hébreu* [Berlin, 1905]).

THE WRITINGS OF ANANDA K. COOMARASWAMY

THERE ARE FEW SCHOLARS ANYWHERE IN THE WORLD WHOSE PUBLICATIONS COVER A WIDER range than those of Dr. Ananda Kentish Coomaraswamy, since many years a fellow for research in Indian, Persian, and Muhammadan art in the Boston Museum of Fine Arts. His researches embrace philosophy, metaphysics, religion, iconography, Indian literature and arts, Islamic art, medieval art, music, geology, and, especially, the place of art in society. His publications comprise many voluminous books and a very large range of pamphlets, articles, and critical reviews published not only in India, Ceylon, England, and the United States, but also in France, Germany, Finland, and Rumania. More astounding than the sheer quantity of his publications are their extraordinary profundity and originality throughout his career, and their deep influence on the spiritually awakened, scholars and laymen alike, all over the world. There are, indeed, few scholars who, like him, are able to go straight to original sources and at the same time have the ability and courage to hand on a clear-cut, uncompromising message of what they have seen, heard, and learned. Never has he had time for, or interest in, presenting personal ideas or novel theories, so constantly and tirelessly has he devoted his energies to the rediscovery of the truth and the restating of the principles by which cultures rise and fall.

The studies to which *Ars Islamica* are devoted are among those that have felt Dr. Coomaraswamy's influence. He has furthermore served its scholarly aims by contributing to its pages and by always being kindly at hand when he was approached as a member of its advisory committee. In view of all this, and as there is no special journal devoted to Indian studies in the United States, I regard it a privilege to bring out Dr. Coomaraswamy's bibliography as a tribute for his sixty-fifth birthday on August 22, 1942.

The bibliography was compiled by Miss Helen E. Ladd, of the Research Seminary of Islamic Art, University of Michigan, with the help of Dr. Coomaraswamy. At his suggestion, the bibliography does not pretend to be complete, but provides only the more important publications. It is arranged chronologically. Publications dealing with Islamic subjects are marked with an asterisk (*).

R. E.

1. On Ceylon Rocks and Graphite. Quart. Journ. Geol. Soc., LVI (1900), 590–614, 4 figs., Pl. XXXIII.
2. Note on the Occurrence of Corundum as a Contact-mineral at Pont Paul near Morlaix (Finisterre). *Ibid.*, LVII (1901), 185–88, 3 figs.
3. The Crystalline Limestones of Ceylon. *Ibid.*, LVIII (1902), 399–402, 2 maps, figs.
4. Origin of the Crystalline Limestones of Ceylon. Geol. Mag., Decade IV, IX (1902), 375–78.
5. The Point de Galle Group (Ceylon): Wollastonite-Scapolite Gneisses. Quart. Journ. Geol. Soc., LVIII (1902), 680–89, 7 figs., map.
6. Radiolaria in Gondwana Beds Near Madras. Geol. Mag., Decade IV, IX (1902), 305–8, figs.

7. Contributions to Ceylon Geology: (1) Corundum *in situ* near Kandy, Ceylon. Geol. Mag., Decade IV, X (1903), 348–50.
8. Note on the Scenery of Ceylon. Ann. Rept. British Assn. Belfast, 1903. Pp. 613–14.
9. Serendibite, a New Boro-silicate from Ceylon (with G. T. Prior). Mineral. Mag., XIII (1903), 224–27, 1 fig.
10. The Tiree and Iona Marbles. Quart. Journ. Geol. Soc., LXIX (1903), 91–103, 2 pls.
11. Administration Report, Mineralogical Survey of Ceylon, 1903. *In* Ceylon Adminis. Rept., Pt. IV, 1903. Colombo, 1904. Pp. L 1—L 12, 12 figs., 2 pls.
12. Contributions to Ceylon Geology: II. Silicification of Crystalline Limestones. Geol. Mag., Decade V, I (1904), 16–19, 1 fig.
13. Contributions to the Geology of Ceylon: III, The Balangoda Group. *Ibid.*, pp. 418–22, 2 figs.
14. The Crystalline Rocks of Ceylon. Spolia Zeylanica (Colombo), I (1904), 1–8.
15. Mineralogical Notes. *Ibid.*, II (1904), 57–64.
16. Mineral Resources of Ceylon. *In* Official Handbook, Ceylon Court, St. Louis World's Fair. Colombo, 1904. Pp. 146–52.
17. Report on Thorianite and Thorite. Colombo, 1904.
18. Administration Report, Mineralogical Survey of Ceylon, 1904. *In* Ceylon Administration Rept., Pt. IV, 1904. Colombo, 1905. Pp. E 1—E 21, 10 figs., 4 pls., glossary of Sinhalese mining terms and names of gems.
19. Contributions to the Geology of Ceylon: IV. Intrusive Pyroxenites, Mica-Pyroxenites, and Mica-rocks in the Charnockite Series or Granulites of Ceylon. Geol. Mag. Decade V, II (1905), 363–69, 1 pl.
20. Minerals New or Rare in Ceylon. Spolia Zeylanica. III (1905), 198–99.
21. Notes on Paddy Cultivation Ceremonies in the Ratnapura District (Nawadun and Kuruwiti Korales). Journ. Ceylon Branch Royal Asiatic Soc., XVIII (1905), 413–28.
22. Borrowed Plumes. Kandy, Ceylon, 1905. Pp. 7 (100 copies).
23. An Open Letter to the Kandyan Chiefs. Ceylon Observer (Colombo, Ceylon), Feb. 17, 1905, and reprinted, Kandy, Ceylon, 1905. Pp. 14.
24. Recent Kandyan Architecture. Sandaresa (Colombo), Oct. 13, 1905.
25. Recent Marine Clays at Kuchavelli, Ceylon. Geol. Mag., Decade V, II (1905), 508–9.
26. Report on the Occurrence of Cassiterite (Oxide of Tin) in Ceylon. Colombo, 1905. Pp. 3.
27. The Rocks and Minerals of Ceylon. Spolia Zeylanica, III (1905).
28. The Rocks and Minerals of Ceylon. *In* Guide to the Colombo Museum. Colombo, 1905. Reprint of No. 27.
29. Administration Report, Mineralogical Survey of Ceylon, 1905. *In* Ceylon Admin. Rept., Pt. IV, 1905. Colombo, 1906. Pp. E 1—E 19, 1 fig., 6 pls., suppl. to glossary.
30. Anglicization of the East. Ceylon National Review (Colombo), I (1906), 181–95.
31. Handbook to the Exhibition of Arts and Crafts in Connection with the Ceylon Rubber Exhibition, Peradeniya, September 13–27, 1906. Colombo, 1906. Pp. 38.

32. Kandyan Art; What it Meant and How it Ended. Ceylon National Review, I (1906), 1–12.
33. Sinhalese Earthenware. Spolia Zeylanica, IV (1906), 1–18 and 135–41.
34. Teaching of Drawing in Ceylon. Ceylon National Review, I (1906), 302–12, figs.
35. Teaching of Drawing in Ceylon. Colombo: Colombo Apothecaries, 1906. Pp. 11, figs. Reprint of No. 34.
36. Two Kandyan Brass Boxes. Ceylon National Review, I (1906), 84–86, 1 pl.
37. Administration Report, Mineralogical Survey of Ceylon, 1906. *In* Ceylon Admin. Rept., Pt. IV, 1906. Colombo, 1907. Pp. E 1—E 14, 1 fig., 3 pls. Bibliography of Ceylon geology.
38. The Deeper Meaning of the Struggle. Broad Campden: Essex House Press, 1907. Pp. 26 (1075 copies).
39. India and Ceylon. Ceylon National Review, II (1907), 15–22.
40. Notes on Painting, Dyeing, Lacwork, Dumbara Mats and Paper in Ceylon. Journ. Ceylon Branch Royal Asiatic Soc., pp. 103–21, 1 fig.
41. The Aims of Indian Art. Broad Campden: Essex House Press, 1908. Pp. 23, 1 pl. (279 copies).
42. Art of the East and of the West. Ceylon National Review, II (1908), 229–33.
43. The Influence of Greek on Indian Art. Broad Campden: Essex House Press, 1908. Pp. 7 (1st ed., 75 copies; 2d ed., 50 copies). Reprint from No. 44.
44. Mediaeval Sinhalese Art. Broad Campden: Essex House Press, 1908. Pp. 340, 55 pls. (425 copies).
45. The Message of the East. Madras: Ganesh, 1908 (?). Pp. 50, Frontis.
46. Netra Mangalya. Broad Campden: Essex House Press, 1908. (25 copies). Reprint from No. 44.
47. The Two Painters. Broad Campden: Essex House Press, 1908. (31 copies).
48. Vegetarianism in Ceylon. Ceylon National Review, II (1908), 125–31.
49. The Village Community and Modern Progress. *Ibid.*, pp. 249–60.
50. Völuspa. Kandy, Ceylon, 1908. Pp. 20.
51. Chank and other Objects from the Maha Devale, Kandy. Spolia Zeylanica, VI (1909), 185–86.
52. Essays in National Idealism. Colombo, Ceylon, 1909. Pp. 206.
53. The Evolution of Music in East and West. Journ. Ceylon Univ. Assn., II (1909), 178–91.
54. Figure of Kapila at Isurumuniya Vihara, Anuradhapura. Spolia Zeylanica, VI (1909), 132–33.
55. Gold Embedding. *Ibid.*, pp. 76–77, 1 fig.
56. The Indian Craftsman. London: Probsthain, 1909. Pp. 130.
57. The International Congress of Applied Chemistry and Aniline Dyes. Modern Review (Calcutta), VI (1909). Pp. 3.
58. Mahayana Buddhist Images from Ceylon and Java. Journ. Royal Asiatic Soc., 1909, pp. 283–97, 3 pls.
59. Völuspa: Done into English out of the Icelandic of the Elder Edda. 2d ed.; Broad Campden: Essex House Press, 1909. Pp. 29 (101 copies).
60. Art and Swadeshi. Madras: Ganesh, 1910 (?). Pp. 150, 18 pls.
61. Domestic Handicraft and Culture: A Lecture Read before the Association of Teachers of Domestic Science, May 28th, 1910. Broad Campden, 1910. Pp. 35 (100 copies).
62. Indian Bronzes. Burlington Mag., XVII (1910), 86–94, 2 pls.

*63. Indian Drawings. London: Printed for the India Society at Essex House Press, 1910. Pp. 32, figs., 29 pls. (400 copies).

64. Indian Maalaustaide. Valvoja (Helsinki), XXX (1910), 661–81.

65. Kansallinen liike Indiassa. *Ibid.*, 1–18.

*66. Night Effects in Indian Pictures. Studio, L (1910), 305–7, 4 figs.

67. Notes on Kandyan Art. Spolia Zeylanica, VII (1910), 39–42, 2 pls.

*68. Originality in Mughal Painting. Journ. Royal Asiatic Soc., 1910, pp. 875–81.

69. Selected Examples of Indian Art. Broad Campden: Essex House Press, 1910. Pp. vii + 20, 40 pls. (425 copies).

70. Indian Opinion on the State Regulation of Vice. The Shield (London), Jan., 1911, pp. 7–8.

71. The New School of Indian Painting. Ceylon National Review, IV (1911), 201–6, 1 fig.

*72. Burning and Melting, Being the Sūz-u-Gudāz of Muhammad Rizā Nau 'ī of Khabūshan. Trans. (with Mirza Y. Dawud). London: Old Bourne Press, 1912. Pp. 65, 3 pls. (405 copies).

73. The Dance of Siva. Siddhanta Dipika (Madras), XIII (1912).

*74. Indian Drawings: 2d Ser., Chiefly Rajput. London: Printed for the India Society at Old Bourne Press, 1912. Pp. 7–34, figs., 26 pls. (405 copies).

75. Introduction to Indian Music. Indian Music Journ. (Mysore), II (1912), 81–82.

76. Rajput Painting. Burlington Mag., XX (1912), 315–24, 4 pls.

77. Rajput Painting. Ostasiatische Zeitschr., I (1912–13), 125–39, 7 figs.

78. The Relation of Art and Religion in India. Report of the Congress of Oriental Religions. Oxford, 1912. Pp. 70–74.

*79. The Arts and Crafts of India and Ceylon. Edinburgh and London: Foulis, 1913. Pp. 255, 225 figs.

*80. D.F.R.Martin and Oriental Painting. Burlington Mag., XXIII (1913), 49–51.

81. Indian Images with Many Arms. *Ibid.*, XXII (1913), 189–96, 2 pls.

*82. Mughal Portraiture. Orientalisches Archiv, III (1912–13), No. 1, 12–15, 3 pls.

83. Sati: A Vindication of the Hindu Woman. Sociological Review, VI (1913), No. 2, 117–35.

84. Some Ancient Elements in Indian Decorative Art. Ostasiatische Zeitschr., II (1913–14), 383–92, 21 figs.

85. Thirty Songs from the Panjab and Kashmir Recorded by Ratan Devi with Introduction and Trans. by Ananda K. Coomaraswamy and a Foreword by Rabindranath Tagore. London: Luzac and Novello, 1913. Pp. 76, 2 pls., musical scores (405 copies).

86. Universal Compulsory Education. Rajput Herald (London), Feb., 1913, pp. 66–67, 2 pls.

87. Bronzes from Ceylon, Chiefly in the Colombo Museum. Memoirs of the Colombo Museum, Ser. A., No. 1. Ceylon, Colombo Museum, 1914. Pp. 31, 28 pls.

88. The Eight Nāyikas. Journ. Indian Art (London), XVI (1914), 100–12, 8 pls.

89. Hands and Feet in Indian Art. Burlington Mag., XXIV (1914), 204–11, 1 pl.

90. Myths of the Hindus and Buddhists (with Sister Nivedita). London: Harrap; and New York: Holt, 1914. Pp. 399, 32 pls.

91. Notes on Jaina Art. Journ. Indian Art, XVI (1914), 81–98, 15 pls.
92. Painted Ceiling at Kelaṇiya Vihāra. *Ibid.*, pp. 113, 1 pl.
93. Viśvakarma: Examples of Indian Architecture, Sculpture, Painting, Handicraft, First Ser.: One Hundred Examples of Indian Sculpture. London: Luzac, 1912–14.
94. The Gods of Mahāyāna Buddhism. Burlington Mag., XXVII (1915), 139–41, 1 pl.
95. Mechanism and Art. The Author (London), Dec., 1915, pp. 75–76.
96. The Taking of Toll. London, Old Bourne Press, 1915. Pp. v + 8, 2 figs.
97. That Beauty is a State. Burlington Mag., XXVII (1915), 7-14, 2 pls.
98. Vidyāpati. Athenaeum, No. 4562 (1915), 312.
99. Vidyāpati, Bangīya Padābali; Songs of the Love of Rādhā and Krishna. Trans. (with Arun Sen). London, 1915. Pp. 192, 11 pls. (325 copies).
100. What has India Contributed to Human Welfare? Athenaeum, No. 4588 (1915), Suppl., 1–7.
101. Buddha and the Gospel of Buddhism. London: Harper, and New York: Putnam, 1916. Pp. 369, pls.
102. Buddhist Art in India. Scribners Mag., LX (1916), 127–30, 5 figs.
103. Buddhist Primitives. Burlington Mag., XXVIII (1916), 151–55; 224–30, 3 pls.
*104. Rajput Painting. London, New York: Oxford Univ. Press, 1916. 2 vols., figs., map, 77 pls.
105. Wat Heeft Het Oosten Bijgedragen Tot Het Welzijn der Menschheid? Trans. (of No. 100) by A. van de Linde, with Foreword by Dr. W. H. Denier van der Gon. Amersfoot: Valkhoff and Co., 1916. Pp. 31.
106. Illustrated Jaina Manuscripts. Boston Mus. Fine Arts, Bull., XV (1917), No. 90, 40–41, 4 figs.
107. Indian Music. Musical Quart., III (1917), No. 2, 163–72.
108. Love in Hindu Literature; a Rejoinder. Hindustan Review (Allahābād, India), April, 1917.
109. The Mirror of Gesture. Trans. from the Sanskrit of Nandikeśvara (with G. K. Duggirala). Cambridge: Harvard Univ. Press, 1917. Pp. 52, 15 pls.
110. Oriental Dances in America. Vanity Fair, May, 1917.
111. References to the Theory and Practise of Art in the Silpa Sāstras. Modern Review (Calcutta), Jan., 1917.
112. The Art of Asia—I. India. Arts and Decoration, November, 1918, pp. 5–8, 6 figs.
113. Asiatic Art—II. The Far East. *Ibid.*, pp. 71–74, 7 figs.
114. Burmese Glazed Tiles. Boston Mus. Fine Arts, Bull., XVI (1918), No. 98, 85, 2 figs.
115. The Dance of Siva: Fourteen Indian Essays. New York: Sunwise Turn, 1918, 1924; Paris, 1922. Pp. 139, 28 pls.
116. Indian Bronzes. Boston Mus. Fine Arts, Bull., XVI (1918), No. 95, 31–41, 20 figs.
*117. Mughal Painting (Akbar and Jahangir). *Ibid.*, No. 93, 1–8, 7 figs.
118. Rajput Painting. *Ibid.*, No. 96, 49–62, 16 figs.
*119. Asiatic Art—III. Persia. Arts and Decoration, January, 1919, pp. 135–37, 180, 6 figs.
120. Buddhist Art in Asia: I. Its Origin and Development in India. Asia, XIX (1919), No. 4, 353–60, 8 figs.

121. Indian Stone Sculptures. Boston Mus. Fine Arts, Bull., XVII (1919), No. 104, 57–63, 6 figs.

*122. Portrait of Gosāīn Jadrūp. Journ. Royal Asiatic Soc., July, 1919, pp. 389–91, 1 pl.

*123. Portraits of Akbar, Raja Man Singh, and others. *Ibid.*, 1918, pp. 536–40.

124. Rajput Painting. Boston Mus. Fine Arts, Bull., XVII (1919), No. 102, 33–43, 10 figs.

125. The Significance of Oriental Art. Art Bull., II (1919), No. 1, 17–22.

126. Khmer Sculpture. Boston Mus. Fine Arts, Bull., No. 106, 20–21, 4 figs.

*127. Leaf of a Koran. *Ibid.*, No. 109, 52–53, 2 figs.

128. A Nepalese Buddhist Painting. *Ibid.*, No. 106, 14–17, 6 figs.

129. Psychical Research. Hindustan Review, Feb., 1920, pp. 79–81.

*130. The Rasikapriyā of Keśava Dās. Boston Mus. Fine Arts, Bull., XVIII (1920), No. 109, 50–52, 3 figs.

131. Siamese Bronzes. *Ibid.*, No. 106, 17–20, 4 figs.

132. The Significance of Oriental Art. Hindustan Review, Jan., 1920, pp. 35–38.

133. Twenty-eight Drawings. New York: Sunwise Turn, 1920. Pp. 2, 28 pls.

134. Three Poems. Ditchling, England: St. Dominic's Press, 1920. Pp. 8, 2 woodcuts by Eric Gill.

134*a*. A Peacock's Feather. Rūpam, No. 4 (1920), 27, 1 fig.

135. America and India. Indian Review (Madras), XXII (1921), 281–84.

136. An Illustrated Nepalese Manuscript. Boston Mus. Fine Arts, Bull., XIX (1921), No. 114, 47–49, 4 figs.

137. A Nepalese Tara. Rūpam, No. 6 (1921), 1–2, 1 fig.

138. Notes on the Javanese Theater. *Ibid.*, No. 7 (1921), 5–11, 12 figs.

139. Sculptures çivaïtes (with A. Rodin, E. B. Havell and V. Goloubew). Ars Asiatica. Bruxelles et Paris: Van Oest, 1921. III, 31, 47 pls.

140. Ajanta Fresco Fragment in the Boston Museum. Rūpam, No. 12 (1922), 121–23, 5 figs.

141. Apropos des danses orientales en Amérique: Qu'est-ce que c'est le Nautch? Bull. de l'association française des amis de l'Orient, No. 2 (1922), 21–25.

*142. Bibliography of Indian Painting. Rūpam, No. 10 (1922), 57–58.

143. Buddhist Sculpture. Boston Mus. Fine Arts, Bull., XX (1922), No. 120, 45–53, 13 figs.

144. Jaina Sculpture. *Ibid.*, No. 120, 53, 1 fig.

145. Oriental Dances in America. Dial, January, 1922, pp. 17–19.

146. Recent Acquisitions of the Department of Indian Art: Two Rajput Paintings; a Fragment of Fresco from Ajanṭā; Sūrya (the Sun-god). Boston Mus. Fine Arts, Bull., XX (1922), No. 122, 69–73, 5 figs.

147. Saiva Sculptures: Umā-Maheśvara Groups and South Indian Bronzes. *Ibid.*, No. 118, 15–24, 10 figs.

148. America and India. Orient (New York), I (1923), 15–17.

149. The Appreciation of Art (with Stella Bloch). Art Bull., VI (1923), 61–64.

150. Catalogue of Indian Art. Pt. I: General Introduction; Pt. II: Sculpture. Boston: Mus. Fine Arts, 1923. Pt. I, pp. 54. Pt. II, pp. v+145, 86 pls.

*151. The Dying Man ('Ināyat Khān). Boston Mus. Fine Arts, Bull., XXI (1923), No. 126, 54.

*152. Early Arabic and Persian Paintings. *Ibid.*, No. 126, 49–53, 8 figs.

*153. Early Persian Paintings in America. *Ibid.*, No. 3, 175–84, 16 figs.

154. Indian Art in Boston. The Arts, III (1923), No. 1, 36–46, 8 figs.

155. An Introduction to Indian Art. Asian Library, IX. Madras: Theosophical Publishing House, 1923. Pp. xi+141, 34 figs.

156. Medieval and Modern Hinduism (with Stella Bloch). Asia, XXIII (1923), No. 3, 203–6, 230, 4 figs.

157. The Nine Planets. Worcester Art Mus., Bull., April, 1923.

158. Notes on Rajput Painting. Rūpam, Nos. 15 and 16 (1923), 72–73.

*159. Portfolio of Indian Art. Boston: Mus. Fine Arts, 1923. 108 pls.

160. Les Arts et métiers de l'Inde et Ceylon, trans. from the English (No. 79). Paris: Vromant, 1924. Pp. 200, 225 figs.

161. A Buddhist Sculpture. Boston Mus. Fine Arts, Bull., XXII (1924), No. 132, 30, 1 fig.

162. Cambodian Dancers and Other Khmer Sculptures Recently Acquired. *Ibid.*, No. 130, 9–13, 9 figs.

163. Catalogue of Indian Art, Part IV: Jaina Paintings and Manuscripts. Boston: Mus. Fine Arts, 1924. Pp. 74, 39 pls.

164. Hindī Rāgmālā Texts. Journ. Amer. Oriental Soc., XLIII (1924), 396–409.

165. The Invention of the Buddha Figure. Ostasiatische Zeitschr., XI (1924), 51–55.

166. Music in India, Indian Music, Indian Musical Instruments. *In* Dictionary of Modern Music and Musicians. London and Toronto, 1924.

167. Notes on Rajput Painting. Ostasiatische Zeitschr., XI (1924), 17–21, 7 figs.

168. A Reply to Mr. Wadia. Eolian Review, III (1924), No. 3, 8–12.

169. Some Indian Sculptures in American Museums. Rūpam, No. 18 (1924), 65–68, 7 figs.

*170. The Treatise of al-Jazari on Automata: Communications to the Trustees, VI. Boston: Mus. Fine Arts, 1924. Pp. 21, 8 pls.

*171. Bibliographies of Indian Art. Boston: Mus. Fine Arts, 1925. Pp. 54.

172. Catalogue des pièces khmères conservées dans les musées de l'Amerique du Nord. Arts et archéol. khmèrs, II (1925), 235–39, 17 figs.

173. The Chinese Theater in Boston (with Stella Bloch). Theatre Arts Monthly, February, 1925.

174. Dīpaka Rāga. *In* Year Book of Oriental Art and Culture, 1924–25. London, 1925.

175. Indian Sculptures. Boston Mus. Fine Arts, Bull., XXIII (1925), No. 139, 57, 7 figs.

176. Three Fragments of Gandhara Sculpture. *Ibid.*, No. 140, 72–75, 4 figs.

*177. Two Mughal Paintings, with Portraits of 'Ali Mardān Khān. *In* Year Book of Oriental Art and Culture, 1924–25. London, 1925.

178. The Bee-song of Sūr Dās. New Orient, III (1926), No. 2, 51–54.

179. Early Indian Sculptures. Boston Mus. Fine Arts, Bull., No. 144, 53–60, 12 figs.

180. Frescoes at Elūrā. Ostasiatische Zeitschr. N. F., III (1926), Hft. I, 1–8, Pl. 3.

181. The Indian Origin of the Buddha Image. Journ. Amer. Oriental Soc., XLVI (1926), No. 2, 165–70.

182. The New Edition of Vincent Smith's "Early History of India"—a Correc-

tion. Journ. Royal Asiatic Soc., 1926, pp. 305–6.

*183. Pour Comprendre l'art hindou. Trans. by Jean Buhot. Paris: Editions Bossard, 1926. Pp. 176, figs., 16 pls.

184. Rajput Paintings. Boston Mus. Fine Arts, Bull., XXIV (1926), No. 142, 23–26, 5 figs.

185. A Statuette of Vishnu from Kashmir. Pennsylvania Univ. Mus. Journ., XVII (1926), 91–93, 1 fig.

*186. Catalogue of the Indian Collections in the Museum of Fine Arts, Boston, Part V: Rajput Paintings. Boston: Mus. Fine Arts, 1927. Pp. 276, 132 pls.

187. An Early Indian Buddha Head. Detroit Instit. Art, Bull., VIII (1927), No. 6, 65–66, 1 fig.

188. Geschichte der indischen und indonesischen Kunst, trans. by Hermann Götz. Leipzig: Hiersemann, 1927. Pp. 323, 128 pls.

189. A Hamsa-Lakṣana Sārī. Boston Mus. Fine Arts, Bull., XXV (1927), No. 149, 36–37, 3 figs.

190. History of Indian and Indonesian Art. Leipzig: Hiersemann, New York: Weyhe; London: Goldston, 1927. Pp. 295, 128 pls., 9 maps.

191. Miti dell' India e del buddhismo (with Sister Nivedita). Trans. by Anna Odierno (No. 90). Bari: Laterza, 1927. Pp. 284.

*192. Notes on Indian Painting. Artibus Asiae, II (1927), No. IV, 283–94, 5 figs.

*193. Notes on Indian Paintings: A Contribution to Mughal Iconography. *Ibid.*, No. I: 5–11, 5 figs.; No. II: 132–37, 5 figs.

*194. Notes on Mughal Painting. *Ibid.*, No. III, 202–12, 10 figs.

195. The Origin of the Buddha Image. Art Bull., IX (1927), No. 4, 287–317, 73 figs.

196. A Pallava Relief: Durgā. Boston Mus. Fine Arts, Bull., XXV (1927), No. 148, 22–25, 3 figs.

*197. Relation of Moghul and Rajput Paintings. Rūpam, No. 31 (1927), 88–91, 4 figs.

198. Sculptures from Mathurā. Boston Mus. Fine Arts, Bull., XXV (1927), No. 150, 50–54, 5 figs.

199. Sthānam. Journ. Royal Asiatic Soc., 1927, p. 322.

200. Two Sunga Railing Pillars. *Ibid.*, p. 847.

201. Archaic Indian Terracottas. Ipek, III (1928), 64–76, 51 figs.

202. The Buddha's *cūḍā*, Hair, *uṣnīṣa*, and Crown. Journ. Royal Asiatic Soc., 1928, pp. 815–43, 2 pls.

203. Citra-lakṣaṇa. Sir Asutosh (Mukerjee) Memorial Volume. Patna, India: J. N. Samaddar, 1926–28. Pp. 49–61.

204. Daṇḍarāsa, vaṃśanartin, and caturaśratva. Journ. Amer. Oriental Soc., XLVIII (1928), No. 3, 281–83.

205. Early Indian Iconography. I. Indra, with Special Reference to 'Indra's Visit.' Eastern Art, I (1928), No. 1, 32–41, 18 figs.

206. An Early Khmer Head of Vishnu. Boston Mus. Fine Arts, Bull., XXVI (1928), No. 153, 16–17, 1 fig.

207. Early References to Fly-fishing. Fishing Gazette (London), No. 2688 (1928), 427.

208. Erakapatra Nāgarāja. Journ. Royal Asiatic Soc., 1928, pp. 629–30.

209. Ganesha. Boston Mus. Fine Arts, Bull., XXVI (1928), No. 154, 30–31, 2 figs.

210. Indian Architectural Terms. Journ. Amer. Oriental Soc., XLVIII (1928), No. 3, 250–75.

*211. Miniatures from Turkish and Persian Books of Fables. Boston Mus. Fine

Arts, Bull., XXVI (1928), No. 157, 89–91, 5 figs.

212. Mudrā, muddā. Journ. Amer. Oriental Soc., XLVIII (1928), No. 3, 279–81.

213. Notes on Indian Coins and Symbols. Ostasiatische Zeitschr., N. F., IV (1927–28), Hft. 4, 175–88, 28 figs.

214. Notes sur la sculpture bouddhique. Revue des arts asiatiques, V (1928), 243–52, 8 figs.

215. Some Early Buddhist Reliefs Identified. Journ. Royal Asiatic Soc., 1928, pp. 390–98.

216. Yakṣas. Smithsonian Miscellaneous Collections, LXXX, No. 6. Washington, D. C.: Smithsonian Instit., 1928. Pp. 43, 23 pls.

217. Āndhra Sculptures. Boston Mus. Fine Arts, Bull., XXVII (1929), No. 160, 19–23, 4 figs.

*218. Arabic and Turkish Calligraphy. *Ibid.*, No. 162, 50–57, 13 figs.

*219. Bronze and Brass Ornamental Work: Indian and Indonesian. Encyclopaedia Britannica. 14th ed.; Chicago, 1929. IV, 249–50, 14 figs.

220. Buddhist Reliefs from Nāgārjunikoṇḍa and Amarāvatī. Rūpam, Nos. 38–39 (1929), 70–76, 11 figs.

221. A Chinese Buddhist Water Vessel and its Prototype (with F. S. Kershaw). Artibus Asiae, III (1928–29), Nos. 2–3, 122–43, 31 figs.

*222. Dance: India. Encyclopaedia Britannica. 14th ed.; Chicago, 1929. VII, 19–22, 16 figs.

223. An Early Cambodian Statue of Harihara. Boston Mus. Fine Arts, Bull., XXVII (1929), No. 161, 40–41, 3 figs.

224. Early Indian Iconography. II. Srī-Lakṣmī. Eastern Art, I (1929), No. 3, 174–89, 36 figs.

*225. Indian and Sinhalese Art and Archaeology. Encyclopaedia Britannica. 14th ed.; Chicago, 1929. XII, 209–19, 104 figs.

*226. Indian Architecture. *Ibid.*, pp. 220–28, 64 figs.

227. Indian Sculpture. Art News, XXVII (April 27, 1929), 35–45, 22 figs.

228. Indonesian and Further Indian Art. Encyclopaedia Britannica. 14th ed.; Chicago, 1929. XII, 267–70, 21 figs.

229. Iron in Art: Indian and Indonesian. *Ibid.*, pp. 681–82.

230. The Javanese Theater (with Stella Bloch). Asia, XXIX (1929), 536–39, 6 figs.

231. The Javanese Theatre (with Stella Bloch). Baker's Drama-Gram. Boston, 1929. VII, 15–17.

*232. Les Miniatures orientales de la collection Goloubew au Museum of Fine Arts de Boston. Ars Asiatica, XIII (1929), 111, 88 pls.

233. Nāgāra Painting. Rūpam, No. 37 (1929), 24–29.

234. The Origin and Use of Images in India. Internat. Studio, XCIII (1929), No. 384, 21–26, 94, 8 figs.

235. A Passage in the Uttara-Rāma-Carita of Bhavabhūti. Journ. Amer. Oriental Soc., XLIX (1929), No. I, 61.

236. Picture Showmen. Indian Hist. Quart., V (1929), No. 2, 182–87.

237. A Royal Gesture and Some Other Motifs. Feestbundel, Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen, 150 Jarig Bestaan 1778–1928, I (1929), 57–61, 8 figs.

*238. Textiles and Embroideries: India. Encyclopaedia Britannica. 14th ed.; Chicago, 1929. XXII, 3–5, 7 figs.

239. Tree of Jesse and Indian Parallels Have Influenced Christian Era. Art and Archaeol., XXVII (1929), 91.

240. Tree of Jesse and Indian Parallels or Origins. Parnassus, I (1929), No. 3, 23.
241. The Tree of Jesse and Indian Parallels or Sources. Art Bull., XI (1929), No. 2, 217–20, 7 figs.
242. A Very Ancient Indian Seal. Boston Mus. Fine Arts, Bull., XXVII (1929), No. 160, 28–29, 2 figs.
243. Yakṣas. Encyclopaedia Britannica. 14th ed.; Chicago, 1929. XXIII, 873, 10 figs.
244. A Yakṣī Torso from Sāñcī. Boston Mus. Fine Arts, Bull., XXVII (1929), No. 164, 90–94, 5 figs.
*245. Catalogue of the Indian Collections: Part VI: Mughal Painting. Boston: Mus. Fine Arts, 1930. Pp. 114, 74 pls.
246. Drawings by Rabindranath Tagore. Rūpam, 42–44 (1930), 31–32.
247. An Early Illustrated Jāina Manuscript. Boston Mus. Fine Arts, Bull., XXVIII (1930), No. 165, 7–8, 2 figs.
248. Early Indian Architecture: I. Cities and City Gates, II. Bodhigharas. Eastern Art, II (1930), 208–35, 45 figs.
249. Early Indian Iconography; Corrigenda and Addenda. *Ibid.*, pp. 240–42.
250. Foreword. Handbook of an Exhibition of Paintings by Rabindranath Tagore held at the Fifty-sixth Galleries, New York, November - December, 1930. New York, 1930. Pp. 3.
251. An Illustrated Svetambara Jāina Manuscript of A.D. 1260. Eastern Art, II (1930), 236–40, 5 figs.
252. An Indian Bronze Bowl. Ostasiatische Zeitschr., N. F., VI (1930), 247–49, 3 figs.
253. Indian Sculpture: a Review. Rūpam, 42–44 (1930), 2–11.
*254. Miniatures from an Early Persian Shāh Nāmah. Boston Mus. Fine Arts, Bull., XXVIII (1930), No. 166, 27–29, 2 figs.
255. A New South Indian Bronze. Rūpam, No. 41 (1930), 1–2, 1 pl.
256. Eine neue südindische Bronze. Pantheon, VI (1930), 388–340 (?), 1 pl. (Trans. of No. 255.)
257. Origin of the Lotus (So-called Bell) Capital. Indian Hist. Quart., VI (1930), 373–75, 3 figs.
258. Pali Kaṇṇikā: Circular Roof-plate. Journ. Amer. Oriental Soc., L (1930), 238–43.
259. The Parts of a Vīnā. *Ibid.*, pp. 244–53, 6 figs.
260. A Pastoral Paradise. *Ibid.*, No. 168, 63–65, 1 fig.
261. A Pastoral Paradise, Rūpam, 42–44 (1930), 14–16. (Same as No. 260).
*262. A Persian Stucco Frieze, and Other Fragments. Boston Mus. Fine Arts, Bull., XXVIII (1930), No. 170, 104–7, 4 figs.
263. The Sāñchī Yakṣī Torso. *Ibid.*, No. 165, 18, 1 fig.
264. The Shadow-play in Ceylon. Journ. Royal Asiatic Soc., 1930, p. 627.
265. A Trinity of Fortune. Penn. Univ. Mus. Bull., II (1930), 15–18, 2 figs.
*266. Two Leaves from a Seventeenth-century Manuscript of the Rasikapriyā. Metropolitan Mus. Studies, III (1930), Pt. 1, 14–21, 4 pls.
267. Two Pallava Marble Pillars. Boston Mus. Fine Arts, Bull., XXVIII (1930), No. 167, 55–58, 5 figs.
268. Boston Acquires Fine Yakshi Bust. Art News, XXX (1931), No. 3, 19.
269. Drawings by Rabindranath Tagore. Roopa Lekha, II (1931). (Same as No. 246.)
270. Early Indian Architecture: III. Palaces. Eastern Art, III (1931), 181–217, 84 figs.

271. An Early Passage on Indian Painting. *Ibid.*, pp. 218–19.
272. Foreword. T. G. Aravamuthan, Portrait Sculpture in South India. London, 1931. Pp. ix-xiii.
273. The Gods of India. The Golden Book of Tagore. Calcutta: Golden Book Committee, 1931. Pp. 283–85.
274. The Guḍimallam Lingam. *Ibid.*, 750 (830).
275. Identification of 'Eine Götterstatue aus der Spätzeit.' Acta Orientalia, IX (1931), 374.
276. The Old Indian Vīṇā. Journ. Oriental Soc., LI (1931), 47–50, 1 fig.
277. Origin of the Lotus Capital. Indian Hist. Quart., VII (1931), No. 4, 747–50 (827–30).
*278. The Persian Wheel. Journ. Amer. Oriental Soc., LI (1931), 283–84.
279. A Rajput Painting. Fogg Art Mus. Bull., I (1931), No. 1, 14–16, 1 fig.
280. Ratha-chidra. Journ. Amer. Oriental Soc., LI (1931), 172.
*281. A Relief and an Inscription from Kashmir. Penn. Univ. Mus. Bull., II (1931), 202–6, 1 fig.
282. A Stucco Head from Central Asia. Boston Mus. Fine Arts, Bull., XIX (1931), No. 173, 39–43, 4 figs.
*283. Two Examples of Muhammadan Metal Work. *Ibid.*, No. 174, 70–72, 5 figs.
284. Two Western Indian Manuscripts. *Ibid.*, No. 171, 4–11, 8 figs.
285. Upavīṇā. Journ. Amer. Oriental Soc., LI (1931), 284–85.
286. Vaḍḍhamāna. Journ. Royal Asiatic Soc., 1931, p. 864.
287. The 'Webbed Finger(s)' of Buddha. Indian Hist. Quart., VII (1931), No. 2, 365–66.
288. A Yakshi Bust from Bharhut. Boston Mus. Fine Arts, Bull., XIX (1931), No. 175, 81–83, 3 figs.
289. Ābhāsa. Journ. Amer. Oriental Soc., LII (1932), No. 3, 208–12.
290. Aesthetic of the Sukranītisāra. Études d'orientalisme (Paris), I-II (1932), 165–68.
291. Yakṣas, Pt. II. Washington: Smithson. Instit., Publ. No. 3059 (1931), 84, 50 pls.
292. A Bengali Painting. Boston Mus. Fine Arts, Bull., XXX (1932), No. 179, 49, 1 fig.
293. The Dance in India. National Encyclopedia. New York: Collier, 1932. III, 397.
294. An Early Rajput Painting. Boston Mus. Fine Arts, Bull., XXX (1932), No. 179, 50–51, 1 fig.
295. Further References to Painting in India. Artibus Asiae, IV (1930–32), Nos. 2–3, 126–29.
296. Indian Architecture. National Encyclopedia. New York: Collier, 1932. V, 425–28, 16 figs.
297. Indian Art. *Ibid.*, p. 428, 13 figs.
298. Introduction to the Art of Eastern Asia. The Open Court. The New Orient Soc. Monograph Ser., No. 2, XLVI (1932), No. 910, 185–215, 11 figs.
299. The 'Mystery' of Mahādeva, a Translation from the Hindī. Indian Art and Letters, VI (1932), No. 1, 10–13.
300. One Hundred References to Indian Painting. Artibus Asiae, IV (1930–32), No. 1, 41–57.
301. Oriental Aesthetics. Parnassus, IV (1932), No. 4, 26.
302. Reactions to Art in India. Journ. Amer. Oriental Soc., LII (1932), No. 3, 213–20.
303. A Vaishnava Relief. Boston Mus. Fine

Arts, Bull., XXX (1932), No. 178, 37–39, 1 fig.

304. Viṣṇudharmottara, Chapter XLI. Journ. Amer. Oriental Soc., LII (1932), No. 1, 13–21.

305. Hindu Sculpture. The League, V (1933), 4–6, 19–20, 6 figs.

306. Hindu Sculpture. Calcutta Review, XLVIII (1933), 143–46. (Same as No. 305.)

307. Hindu Sculpture at Zayton. Ostasiatische Zeitschr., N.F., IX (1933), 5–11, plan, 4 figs., 3 pls.

308. Hindu Theatre. Indian Hist. Quart., IX (1933), 594.

309. Introduction to the Art of Eastern Asia. New Orient, I (1933), 121–51, 11 figs. Reprint of No. 298.

310. Mahā-Pralaya and Last Judgement. Indian Hist. Quart., IX (1933), 18–21.

311. Mahā-Pralaya and Last Judgement. Blackfriars (Oxford), XIV (1933), 494–97. (Same as No. 310.)

312. A New Approach to the Vedas. An Essay in Translation and Exegesis. London: Luzac, 1933. Pp. ix + 116.

313. On Translation: Māyā, Deva, Tapas. Isis, No. 55, XIX (1933), 1, 74–91.

314. The Painter's Art in Ancient India: Ajanta. Journ. Indian Soc. Oriental Art, I (1933), 26–30.

315. Paṛāvrtti: Transformation, Regeneration, Anagogy. *In* Festschrift Morris Winternitz. Leipzig, 1933. Pp. 232–36.

316. A Relief from Persepolis. Boston Mus. Fine Arts, Bull., XXXI (1933), No. 184, 21–25, 2 figs.

317. Versions from the Vedas. Indian Art and Letters, n.s., VII (1933), 1, 19–26.

318. [Editor of words of Indian origin.] *In* Webster's New International Dictionary. Springfield, Mass., 1934.

*319. An Eleventh Century Silver Salver from Persia. Boston Mus. Fine Arts, Bull., XXXII (1934), No. 192, 55–58, 7 figs.

320. *Kha* and Other Words Denoting 'Zero,' in Connection with the Metaphysics of Space. Bull. School of Oriental Studies, VII (1934), 487–97.

*321. Khwājā Khadir and the Fountain of Life, in the Tradition of Persian and Mughal Art. Ars Islamica, I (1934), Pt. 2, 173–82, 3 figs. (No. 393).

322. The Technique and Theory of Indian Painting. Technical Studies, III (1934), 59–89, 2 figs.

323. The Transformation of Nature in Art. Cambridge, Mass.: Harvard Univ. Press, 1934. Pp. 245.

324. Understanding the Art of India. Parnassus, VI (1934), No. 4, 21–26, p. 30, 3 figs.

325. Angel and Titan, an Essay in Vedic Ontology. Journ. Amer. Oriental Soc., LV (1935), 373–419.

326. An Approach to Indian Art. Parnassus, VII (1935), No. 7, 17–20, 1 fig.

327. An Approach to Indian Art. *In* Catalogue of the College Art Association, Loan Exhibition of Indian Art, Heeramaneck Galleries. New York, 1935. (Same as No. 326.)

328. Chāyā. Journ. Amer. Oriental Soc., LV (1935), 278–83.

329. The 'Conqueror's Life' in Jaina Painting. Journ. Indian Soc. Oriental Art, III (1935), 127–44, 14 figs.

330. The Darker Side of Dawn. Smithson. Misc. Coll., XCIV (1935), No. 1, 18.

331. Elements of Buddhist Iconography. Cambridge, Mass.: Harvard Univ. Press, 1935. Pp. 95, 15 pls.

332. An Illustrated Jaina Manuscript. Boston Mus. Fine Arts, Bull., XXXIII (1935), No. 197, 36–40, 8 figs.

333. The Intellectual Operation in Indian Art. Journ. Indian Soc. Oriental Art, III (1935), 1–12.

334. Mediaeval Aesthetic. I. Dionysius the Pseudo-Areopagite and Ulrich Engelberti of Strassburg. Art Bull., XVII (1935), Pt. 1, 31–47.

335. A Passage on Vīṇā-playing. Zeitschr. f. vergleichende Musikwissenschaft, III (1935), 88.

336. The Rig Veda as Land-Nāma-Bók. London: Luzac, 1935. Pp. 39, 3 figs.

337. Sacred and Profane Science (trans. from the French of René Guénon). Viśva-Bharati (Calcutta), n.s., I (1935), Pt. III, 11–24, 1 fig.

338. La Sculpture de Bodhgayā. Ars Asiatica, XVIII (1935), 72, 60 pls.

339. A Study of the Kaṭha-Upaniṣad (IV. 1). Indian Hist. Quart., XI (1935), No. 3, 570–84.

340. The Transformation of Nature in Art. 2d ed.; Cambridge, Mass.: Harvard Univ. Press, 1935. Pp. 245.

341. The Tree of Jesse and Oriental Parallels. Parnassus, VII (1935), No. 1, 18–19, 2 figs.

342. Two Vedantic Hymns from the Siddhântamuktâvalī. Bull. School of Oriental Studies, VIII (1935), Pt. 1, 91–99.

343. Understanding the Art of India. Blackfriars, April, 1935.

344. Understanding the Art of India. Calcutta Review, April, 1935, pp. 6. (Same as No. 343.)

345. What is Common to Indian and Chinese Art. The Usha (Lahore), XI (1935), 1, 18, 3 pls.

346. The Appreciation of the Unfamiliar Arts. Viśva-Bharati, n.s., II (1936), Pt. 1, 17–21.

347. For an Exhibition of Indian Art. Calcutta Review, March, 1936, pp. 264–66.

348. L'Idée de 'création éternelle' dans le Rig-Veda. Études traditionelles, XLI (1936), No. 193, 13–17.

349. An Indian Crocodile. Boston Mus. Fine Arts, Bull., XXXIV (1936), No. 202, 26–28, 4 figs.

350. The Love of Art. Parnassus, VIII (1936), No. 4, 22–23.

351. The Love of Art. Blackfriars, June, 1936, pp. 434–39. Reprint of No. 350.

352. Mirror of Gesture. Trans. from the Sanskrit of Nandikeśvara (with G. K. Duggirala). 2d ed.; New York: Weyhe, 1936. Pp. 81, 20 pls.

353. The Nature of 'Folklore' and 'Popular Art.' Quart. Journ. Mythic Soc. (Bangalore), XXVII (1936), Nos. 1–2, 1–12. French trans. in Etudes traditionelles, XLII (1937), 206–13.

354. Nirukta-Hermeneia. Viśva-Bharati, n.s., II (1936), Pt. 2, 11–17. French trans. in Etudes traditionelles, XLI (1936), 405–15.

355. A Note on the Aśvamedha. Archiv Orientalni (Prague), VII (1936), 306–17.

356. Patron and Artist, Pre-Renaissance and Modern (with A. G. Carey). Norton, Mass.: Wheaton College Press, 1936. Pp. 7–69, 1 fig. (Lecture delivered at Wheaton College: "The Normal View of Art.")

357. The Pertinence of Philosophy. *In* Contemporary Indian Philosophy. London: Allen, 1936. Pp. 113–38.

358. Rebirth and Omniscience in Pali Buddhism. Indian Culture, III (1936), 19–33.

359. The Source of, and a Parallel to, Dionysius on the Beautiful. Journ. Greater Indian Soc., III (1936), 36–42.
360. Sri Ramakrishna and Religious Tolerance. Prabuddha Bharata (Mayavati, India), XLI (1936), 268–74. French trans. in Études traditionelles, XLI (1936), 251–64.
361. Two Passages in Dante's Paradiso. Speculum, XI (1936), 327–38.
362. Vedic Exemplarism. Harvard Journ. Asiatic Studies, I (1936), 44–64, 281.
363. Vedic Monotheism. Dr. S. Krishnaswami Aiyangar Commemoration Volume. Madras, 1936. Pp. 18–25.
364. Vedic 'Monotheism.' Journ. Indian History, XV (1936), 84–92. (Revision of No. 363.)
365. Anattā: Nāma-rūpa. Indian Culture, III (1937), No. 4, 760–61.
366. Beauté, lumière et son. Etudes traditionelles, XLII (1937), 51–60.
367. Le Doctrine tantrique de la 'Bi-unité divine.' *Ibid.*, pp. 289–301.
368. The "Four Causes" in the Bhagavad Gītā. Journ. Amer. Oriental Soc., LVII (1937), 415.
369. Indian Bronzes. Parnassus, IX (1937), No. 1, 21–23, 4 figs.
370. The Indian Doctrine of Man's Last End. Asia, XXXVII (1937), 380–81.
371. An Introduction to Bronze Statuettes. *In* Master Bronzes Selected from Museums and Collections in America. Buffalo: Albright Gallery, 1937. P. 6, 14 figs.
372. Is Art a Superstition or a Way of Life? Amer. Review, IX (1937), 186–213.
373. Is Art a Superstition or a Way of Life? John Stevens Pamphlets, No. 4 (1937), 23. Reprint of No. 372.
374. Janaka and Yājñavalkya. Indian Hist. Quart., XIII (1937), 261–78.
375. Mahābhārata, Itihāsa. Ann. Bhandarkar Oriental Research Instit., XVIII (1937), 211–12.
376. The Nature of 'Folklore' and 'Popular Art.' Indian Art and Letters, n.s., XI (1937), 76–84. Reprint of No. 353.
377. Nirukta=Hermeneia, note additionelle. Études traditionelles, XLII (1937), 60–61.
378. 'Pantheism,' Indian and Neo-Platonic. Journ. Indian History, XVI (1937), 249–52. French trans. in Études traditionelles, XLIII (1938), 355–59.
379. The Part of Art in Indian Life. *In* Cultural Heritage of India. Calcutta, 1937. III, 485–513.
380. The Parts of a Vīṇā. Journ. Amer. Oriental Soc., LVII (1937), 101–3.
381. The Pilgrim's Way. Journ. Bihar and Orissa Research Soc., XXIII (1937), 452–71.
382. The Rape of a Nāgī: An Indian Gupta Seal. Part I. Boston Mus. Fine Arts, Bull., XXXV (1937), No. 209, 38–41, 4 figs.
383. The Rape of a Nāgī: An Indian Gupta Seal. Part II. *Ibid.*, No. 210, 56–57.
384. The Time Factor in Indian Wall Painting. Technical Studies, VI (1937), 106–8.
385. Uday Shankar's Indian Dancing. Mag. of Art, XXX (1937), 611–12, 645, 4 figs.
386. The Vedic Doctrine of 'Silence.' Indian Culture, III (1937), No. 4, 559–69.
387. Virgin Suckling St. Bernard. Art Bull., XIX (1937), 317–18. French trans. in Études traditionelles, XLII (1937), 415–18.
388. What Use Is Art Anyway? Amer. Review, VIII (1937), 321–35.

389. What Use Is Art Anyway? John Stevens Pamphlets, No. 2 (1937). Reprint of No. 388.
390. Asiatic Art. Chicago: New Orient Soc., 1938. Pp. 15, 3 figs.
391. Du Prétendu 'panthéisme' dans l'Inde et dans le néo-platonisme. Études traditionelles, XLIII (1938), No. 226, 355–59.
392. The Inverted Tree. Quart. Journ. Mythic Soc., XXIX (1938), 111–49.
*393. Khwājā Khadir et la fontaine de vie. Études traditionelles, XLIII (1938), 303–18, 2 figs. (No. 321).
394. Mediaeval Aesthetic, II. St. Thomas Aquinas on Dionysius, and a Note on the Relation of Beauty to Truth. Art Bull., XX (1938), 66–77.
395. The Nature of Buddhist Art. *In* The Wall Paintings of India, Central Asia, and Ceylon (with B. Rowland). Boston: Merrymount Press, 1938. Pp. 3–38.
396. Nirmāṇa-kāya. Journ. Royal Asiatic Soc., 1938, pp. 81–84.
397. Note on a Review by Richard Florsheim of *Is Art a Superstition or a Way of Life*. Art Bull., XX (1938), 443.
398. Notes on the Kaṭha Upaniṣad. New Indian Antiquary, I (1938), 43–56, 83–108, 199–213.
399. The Philosophy of Mediaeval and Oriental Art. Zalmoxis (Budapest), I (1938), 20–49.
400. The Pilgrim's Way, a Buddhist Recension. Journ. Bihar and Orissa Research Soc., XXIV (1938), 118–19.
401. The Symbolism of the Dome. Indian Hist. Quart., XIV (1938), 1–56.
402. Le Symbolisme de l'epée. Études traditionelles, XLIII (1938), 11–17.
403. The Tantric Doctrine of Divine Biunity. Ann. Bhandarkar Oriental Research Instit., XIX (1938), 173–83. (No. 367).
404. Tathāgata. Bull. School of Oriental Studies, IX (1938), 331.
405. Two Reliefs from Bharhut in the Freer Gallery. Journ. Indian Soc. Oriental Art, VI (1938), 145–62, 2 pls.
406. Uṣṇīṣa and Chatra: Turban and Umbrella. Poona Orientalist, III (1938), 1–19.
407. La Voie lactée. Études traditionelles, XLIII (1938), 175–76.
408. The Yakṣa of the Vedas and Upaniṣads. Quart. Journ. Mythic Soc., XXVIII (1938), 231–40.
409. Le Bouddhisme original. Études traditionelles, XLIV (1939), 162–74.
410. The Christian and Oriental, or True, Philosophy of Art. Newport: J. Stevens, 1939. Pp. 38 (400 copies).
411. Communication from Mrs. C. A. F. Rhys David. Journ. Amer. Oriental Soc., LIX (1939), 110–11.
412. De la 'Mentalité primitive.' Études traditionelles, XLIV (1939), 277–300, 1 pl.
413. Eckstein. Speculum, XIV (1939), 66–72.
414. An Indian Ivory. Boston Mus. Fine Arts, Bull., XXXVII (1939), No. 221, 51, 1 fig.
415. Mahātma. Calcutta Review, LXXI (1939). French trans. in Études traditionelles, XLIV (1939), 82–86.
416. Note on the Iconography of the Cock on the Column. Art Bull., XXI (1939), 375–82.
417. L'Ordination bouddhique est-elle une initiation? Études traditionelles, XLIV (1939), 242–48.
418. Ornament. Art Bull., XXI (1939), 375–82.
419. The Reinterpretation of Buddhism. New Indian Antiquary, II (1939), 575–90.

420. Some Pāli Words. Harvard Journ. Asiatic Studies, IV (1939), 116–90.
421. The Traditional Conception of Ideal Portraiture. Journ. Indian Soc. Oriental Art, VII (1939), 74–82.
422. The Traditional Conception of Ideal Portraiture. Twice a Year, III-IV (1939), 244–52. (Same as No. 421.)
423. The Vedanta and the Western Tradition. Amer. Scholar, VIII (1939), 223–47.
424. 'Ākiṁcaññā': Self-naughting. New Indian Antiquary, III (1940), 1–16.
*425. An Indian Enamel. Boston Mus. Fine Arts, Bull., XXXVIII (1940), No. 226, 23–28, 10 figs.
426. The Nature of Mediaeval Art. Arts of the Middle Ages. Boston: Museum of Fine Arts, 1940. Pp. 3.
427. The Nature of Mediaeval Art. Art News, XXXVIII (1940), No. 20, 7, 23–24, 1 fig. (Same as No. 426.)
428. Nirvâna, Nibbâna. Études traditionelles, XLV (1940), 139–47. (From No. 420.)
429. Primitive Mentality. Quart. Journ. Mythic Soc., XX (1940), 1–23, 1 pl.
430. The Sun-kiss. Journ. Amer. Oriental Soc., LX (1940), 46–67.
431. Le Corps parsemé d'yeux. Zalmoxis, II (1939–41), 153–55.
432. The 'E' at Delphi. Review of Religion, V (1941), 18–19.
433. Foreword. La Meri, Gesture Language of the Hindu Dance. New York: Columbia Univ. Press, 1941. Pp. 2.
434. An Ivory Casket from Southern India. Art Bull., XXIII (1941), 207–12, 1 pl.
435. Līlā. Journ. Amer. Oriental Soc., LXI (1941), 98–101.
436. Svayamātṛṇṇā: Janua Coeli. Zalmoxis, II (1939), No. 1, 3–51, 7 pls.
437. Why Exhibit Works of Art? Journ. Aesthetics and Art Criticism, I (1941), 27–41; and Blackfriars, Sept. and Oct., 1942.
438. Ātmayajña: Self-sacrifice. Harvard Journ. Asiatic Studies, VI (1942), Nos. 3 and 4, 358–98.
439. Eastern Religions and Western Thought. Review of Religion, VI (1942), 129–45.
440. Foreword. Prospectus of the College of Notre Dame Workshop. Baltimore, 1942.
441. Horse-riding in the Ṛgveda and Atharvaveda. Journ. Amer. Oriental Soc., LXII (1942), 139–42.
441*a*. Sarpabandha. *Ibid.*, pp. 341–42.
442. An Indian Image of Brahmā. Boston Mus. Fine Arts, Bull., XL (1942), 39–41, 2 figs.
443. Wall Paintings of India and Ceylon. Bull. Iranian Instit., V (1942), No. 4, 8–11, Pls. II-III.
444. Spiritual Authority and Temporal Power, in the Indian Theory of Government. American Oriental Ser., XXII. New Haven, Conn.: Amer. Oriental Soc., 1942. Pp. 87, 1 pl.
445. What of India? New English Weekly, Aug. 20, 1942, pp. 140–41.
446. Play and Seriousness. Journ. Phil., XXXIX (1942), 550–52.
447. On Being in One's Right Mind. Review of Religion, VII (1942), 32–40.
448. Hinduism and Buddhism. New York: Philosophical Library, 1943.
449. Am I My Brother's Keeper? Asia, Jan., 1943, pp. 135–38.
450. Saṁvega, Aesthetic Shock. Harvard Journ. Asiatic Studies, VII (1943), 174–79.

IN PRESS

451. Dance, Music, and Rhetoric. *In* The

Asiatic Legacy and American Life (New York: John Day).

452. The Symbolism of Archery. Ars Islamica.

453. Literary Symbolism, and other articles. The Dictionary of World Literature (New York).

REVIEWS

454. B. Bhattacharyya, *The Indian Buddhist Iconography*. Journ. Amer. Oriental Soc., XLVI (1926), 187–89.

455. K. de B. Codrington, *Ancient India. Ibid.*, pp. 253–56.

455*a*. Military Origin of the Minuet. E. Faure, *The Dance Over Fire and Water*. Dial, LXXX (1926), No. 14, 340–44.

456. N. C. Mehta. *Studies in Indian Painting*. Journ. Amer. Oriental Soc., XLVIII (1928), 275–78.

457. A. H. Longhurst, *Pallava Architecture*, Pts. I, II. *Ibid.*, XLIX (1929), 70–71.

458. J. Ph. Vogel, *Indian Serpent Lore. Ibid.*, pp. 186–90, 1 pl.

459. R. D. Banerji, *Basreliefs of Bādāmi. Ibid.*, 191–93, 4 ills.

460. P. Stern, *Le Bayon d'Angkor et l'evolution de l'art khmer. Ibid.*, pp. 330–31.

*461. The Art of Bookmaking in Islam. T. W. Arnold and A. Grohmann, *The Islamic Book*. Internat. Studio, XCV (1930), No. 392, 71–72.

462. Early Indian Art Traced Through Six Centuries of Stylistic Change. L. Bachhofer, *Indian Sculpture. Ibid.*, No. 393, 68–69.

463. A. H. Longhurst, *Pallava Architecture*, Pt. III. Journ. Amer. Oriental Soc., L (1930), 266.

464. Sense About Art. E. Gill, *Art Nonsense*. Internat. Studio, XCVI (1930), No. 396, 76.

*465. E. Blochet, *Musulman Painting. Ibid.*, No. 397, 68.

*466. New Data on Indian Painting. I. Stchoukine, *La Peinture indienne à l'époque des grands Moghols* and *Les Miniatures indiennes de l'époque des grands Moghols au Musée du Louvre. Ibid.*, XCVII (1930), No. 400, 72–74.

*467. Islamic Art in Brief. M. S. Dimand, *A Handbook of Mohammedan Decorative Art. Ibid.*, XCVIII (1931), No. 405, 64–65.

468. J. Ph. Vogel, *La sculpture de Mathurā*. Journ. Amer. Oriental Soc., LI (1931), 54–58.

469. L. Bachhofer, *Early Indian Sculpture. Ibid.*, pp. 58–59.

470. E. H. Warmington, *The Commerce Between the Roman Empire and India. Ibid.*, pp. 180–82.

471. Lefebure de Noëtte, *L'Attelage et le cheval de selle à travers les âges. Ibid.*, LII (1932), 84–86.

472. H. Cousens, *Somanātha and Other Mediaeval Temples in Kāṭhiāwāḍ. Ibid.*, LIII (1933), 197.

473. C. K. Ogden and I. A. Richards, *The Meaning of Meaning*, and I. A. Richards, *Mencius on the Mind. Ibid.*, pp. 298–303.

474. R. Wilhelm and C. G. Jung, *The Secret of the Golden Flower. Ibid.*, pp. 303–5.

475. W. N. Brown, *The Story of Kālaka. Ibid.*, pp. 305–7.

476. S. Kramrisch, *Indian Sculpture. Ibid.*, LIV (1934), 219–21.

477. H. Goetz, *Geschichte der indischen Miniaturmalerei. Ibid.*, pp. 440–42.

478. W. Andrae, *Die ionische Säule*. Art Bull., XVII (1935), Pt. 1, 103–7.

*479. A. B. Sakisian, *La Miniature persane*

and N. K. Bhaṭṭasāli, *Iconography of Buddhist and Brahmanical Sculptures in the Dacca Museum.* Journ. Amer. Oriental Soc., LV (1935), 81–82.

*480. J. V. S. Wilkinson, *Lights of Canopus* and W. P. Stutterheim, *A Javanese Period in Sumatran History. Ibid.,* pp. 170–71.

481. P. Mus, *Le Buddha paré;* G. Coedès, *Études cambodgiennes;* A. H. Longhurst, *Pallava Architecture, Part III* and P. N. Bose, *Pratimā-Māna-Lakṣaṇam. Ibid.,* pp. 263–67.

482. A. Foucher, *On the Iconography of the Buddha's Nativity. Ibid.,* pp. 323–25.

483. B. Barua, *Gayā and Buddha-Gayā. Ibid.,* LVII (1937), 191–93.

484. P. Mus, *Barabuḍur. Ibid.,* pp. 336–43.

485. Sri Ramakrishna Centenary Committee, *The Cultural Heritage of India;* and G. T. Garratt, *The Legacy of India. Ibid.,* pp. 426–28.

486. A. Getty, *Ganneśa. Ibid.,* pp. 428–29.

487. Mrs. R. Davids, *What Was the Original Gospel in Buddhism? Ibid.,* LVIII (1938), 679–86. Cf. No. 419.

488. E. D. Andrews and F. Andrews, *Shaker Furniture.* Art Bull., XXI (1939), 200–206.

489. C. Hentze, *Früchinesische Bronzen* and A. Salmony, *Carved Jade of Ancient China. Ibid.,* XXII (1940), 52–55.

490. Marco Pallis, *Peaks and Lamas.* Asia, XL (1940), No. 2, 111.

491. G. H. Hardy, *A Mathematician's Apology.* Art Bull., XXIII (1941), No. 4, 339.

492. La Meri, *The Gesture Language of the Hindu Dance.* Asia, XLII (1942), No. 5, 309–10.

493. Eric Gill, *Autobiography.* Journ. of Aesthetics and Art Criticism, V (1942).

IN PRESS

494. René Guénon, *East and West,* and *The Crisis of the Modern World,* London, 1941–42. Isis.

NOTES

EXCAVATIONS IN UZBEKISTAN, 1937–1939

I

Archaeological research was conducted during 1937–39 by the Uzbekistan Committee for the Preservation and Study of Ancient Monuments (UZKOMSTARIS) in Tashkent and by local organizations throughout Uzbekistan, all co-operating with the Institute of Anthropology and Ethnography (IAE) and the Historical Institute of Material Culture (IIMK), both of the Academy of Sciences of the U.S.S.R. in Leningrad.

These researches continued work in progress. Several of our summaries[1] of archaeological investigations within the confines of the Union of Soviet Socialist Republics have included data from the Uzbek S.S.R. The following notes, which summarize the results obtained by the Termez (Tirmidh) and Zarafshān expeditions, were received[2] from the All-Union Society for Cultural Relations with Foreign Countries (VOKS) in Moscow.

The Termez expedition conducted excavations in the ancient city of Termez and at Airtam, which is situated 17 kilometers east of Termez, on the right bank of the Amu Darya. Ancient written sources do not mention Airtam, but since the ruins cover an extensive area and the artifacts unearthed are of skilled workmanship, this must have been a large settlement. The elevated part of the site, which is 250 by 100 meters, is bounded on three sides by shapeless clay walls. The fourth side is contiguous with the steep bank of the Amu Darya. The ruins of the settlement, also enclosed by walls, are directly adjacent to the elevated part of the site.

The excavations were concentrated on the southwestern part of the platform. Several premises, belonging to a single edifice, built of large, unburnt bricks, were unearthed. Those rooms in which a sculptured cornice and fragments of reliquaries and of an alabaster statue of Buddha were found during the first excavations on the site undoubtedly served for cult purposes (*Figs. 1, 2,* and *3*[3]).

The adjacent premises, with several hearths and large clay pots (khumī) for storing food and water, probably served as the sanctuary kitchen. Two floors, dating from different periods, were unearthed in the sanctuary. Parts of the walls, between the two floors, were covered with a fine layer of alabaster, which was entirely different from the rough clay plaster still preserved above the upper floor.

Thus, two different periods have been established for this building, the first of which is dated by a bronze coin of an unnamed ruler with the inscription: "BAIEE BA I EWN EWTHP ME

[1] H. Field and E. Prostov, "Archaeological Investigations in Central Asia, 1917–37," *Ars Islamica,* V (1938), 233, footnote 1; *idem,* "Archaeology in the Soviet Union," *Antiquity,* XIV (1940), 404, footnote 3; *idem,* "The Oriental Institute Archaeological Report on the Near East, Uzbek and Kazakh S.S.R.," *Amer. Journ. Semitic Lang. and Lit.,* LVIII (1941), 109–10; *idem,* "Archaeological Discoveries in the Union of Soviet Socialist Republics," Microfilm No. 1605 (1941), 60–81, in Amer. Documentation Instit., Dept. Agric., Washington, D.C. See also M. E. Masson, "Les Travaux archéologiques en Uzbekistan 1933–1935," *Mém. III^e congrès internat. d'art et d'archéol. iraniens, 1935* (Moscow-Leningrad, 1939), pp. 127–28 (in Russian), p. 129 (French résumé), Pls. LIV-LV; B. P. Deniké, *Architectural Ornament in Central Asia* (Moscow-Leningrad, 1939) (in Russian); B. W. Weimarn, *L'Art de l'Asie Centrale* (Moscow-Leningrad, 1940) (in Russian with French titles).

[2] In a private communication in English, dated December 10, 1940.

[3] For another view of this particular bust, see Field and Prostov, "Archaeological Investigations . . .," Fig. 4.

A," referring to the first century B.C.

Excavations carried on at a still greater depth, beneath the lower floor, brought to light cultural strata attributed to the latest centuries before our era. In these strata thin-walled pottery of dark rose clay with a red slip and fired clay tiles, one of which is stamped with a representation of a deer, were found.

Excavations at Airtam also yielded a large number of shards, thick-walled khumī, kettles, jugs, plates, bowls, saucers, and conical lampions. The prevailing type of pottery was covered with a brown, cream, or red slip, for the most part without ornament, often superbly burnished and composed of fine clay. There were also examples of colored varnished pottery.

The ornamentation can be divided into five categories: stamped, molded, burnished, painted, and incised. With but few exceptions the vessels were wheel-made. In several sections of Airtam kilns and large heaps of slag indicated extensive local development of pottery manufacture.

Many terra-cotta figurines of animals and people, cult objects, statuettes, and architectural fragments of marly limestone (*Figs. 4* and *5*) were unearthed. One male figure, 22.5 cm. high and in barbarian dress, is shown holding a disk with a palmette in relief (*Fig. 4*); a Kushan type figure is represented with a vessel in the left hand (*Fig. 5*).

The different periods represented in the cultural deposits, the lowest attributed to the last centuries before our era and the upper to the first centuries of our era, reveal that Airtam existed over a long period of time.

Excavations were also conducted at several points in the ancient city of Termez. An ancient Buddhist monastery, consisting of many artificial caves and of overground chambers, was found on the Ḳara Tappa elevation. The upper structures were built of unburnt brick and partly faced with stone. The floor was also of unbaked brick, coated with clay. The walls had a lower coating of clay covered with alabaster, on which traces of varicolored frescoes have been preserved. The walls of one room possessed a red border. A picture showing the lower part of a human figure is still preserved above the border, and traces of the feet, encased in red footgear, and parts of colored garments may still be discerned. The painting resembles that at Bamian.

The caves, dug at different levels in the sandstone strata of the mounds, are connected by staircases. Caves situated on one level, however, communicate through corridors. The caves consist of rectangular chambers of 7 to 12 square meters and are encircled on all sides by passageways about 3 meters wide and from 13 to 16 meters long; the corridors and the caves are 1.5 to 2.0 meters high (*Figs. 6* and *7*). Benches were hewn along the walls of the caves and shallow niches occur in the walls of the caves and corridors. Arabic inscriptions were discovered on the walls, which indicate that Arabs visited and possibly used these caves for a considerable time after their conquest of Termez. The excavations brought to light several caves of large dimensions, probably intended for public purposes, as well as small caves for individual use. Coins, pottery, and other finds at Ḳara Tappa date from the last centuries B.C. to the first centuries A.D. (*Fig. 8*).

The eastern façade of a suburban palace of the Termez[4] rulers of the eleventh and twelfth centuries (*Fig. 9*) was cleared in order to establish the ground plan. The excavators also unearthed a water reservoir of 70 meters square and 2 meters deep, constructed in the courtyard of this palace complex. The walls were faced with burnt bricks, as was each corner platform, and three steps led into the tank. Earthenware pipes with a brick trough lying parallel were in the northeastern corner. Water flowed into the reservoir through the pipes and the trough (*Fig. 10*).

[4] See also B. P. Deniké, "Le Décor en stucco sculpté d'un édifice fouillé à Termez," *Mém. III^e congrès internat. d'art et d'archéol. iraniens,* pp. 39–43 (in Russian), p. 44 (French résumé), Pls. XX-XXIII; *idem, Architectural Ornament in Central Asia,* Figs. 32–66.

FIGS. 1–2—LIMESTONE CORNICES FROM AIRTAM

Fig. 3—Detail of Cornice from Airtam

Fig. 4—Limestone Figure from Airtam

Fig. 5—Terra-cotta Figure from Airtam

In clearing the northern lateral pavilion of the palace, alabaster was found, together with pieces of colored glass, parts of an alabaster grating, and decorative, oval-shaped glass medallions 5 to 7 centimeters in diameter and 2 to 5 millimeters in thickness, molded from green or reddish glass. The pictures in relief on the obverse side of the medallions refer to eight subjects: (1) an eight-petalled rosette, in a double circle, consisting of a center and a row of closely set pearls (*Fig. 11*); (2) a medallion bearing a Kufic inscription, with plant ornaments around the letters and at the edges; the inscription is faint and reads either "king" or "kingdom"; (3) the figure of an animal running to the left, encircled by an Arabic inscription which reads "for the most high Sultan 'Abd al-Muẓaffar Bahrām Shah." This inscription may refer either to the ruler of Ghazni, Yamīn al-Dawla Bahrām Shah ibn Mas'ūd (1118–57 A.D.) or to Bahrām Shah ibn 'Imād al-Dīn, the ruler of Termez in 1205 A.D.; (4) a bird of prey, clawing to pieces some small animal; (5) a bird of prey, holding an animal in its claws (*Fig. 12*); (6) a lion in a circle (*Fig. 13*); (7) a woman standing beside a horse; and (8) a horseman, wearing a crown surrounded by a halo, holding the reins in his right hand and with a hunting bird [falcon?] on his left forearm (*Fig. 14*). Several of these representations are akin in subject to pictures on ancient metalware found near the Urals.

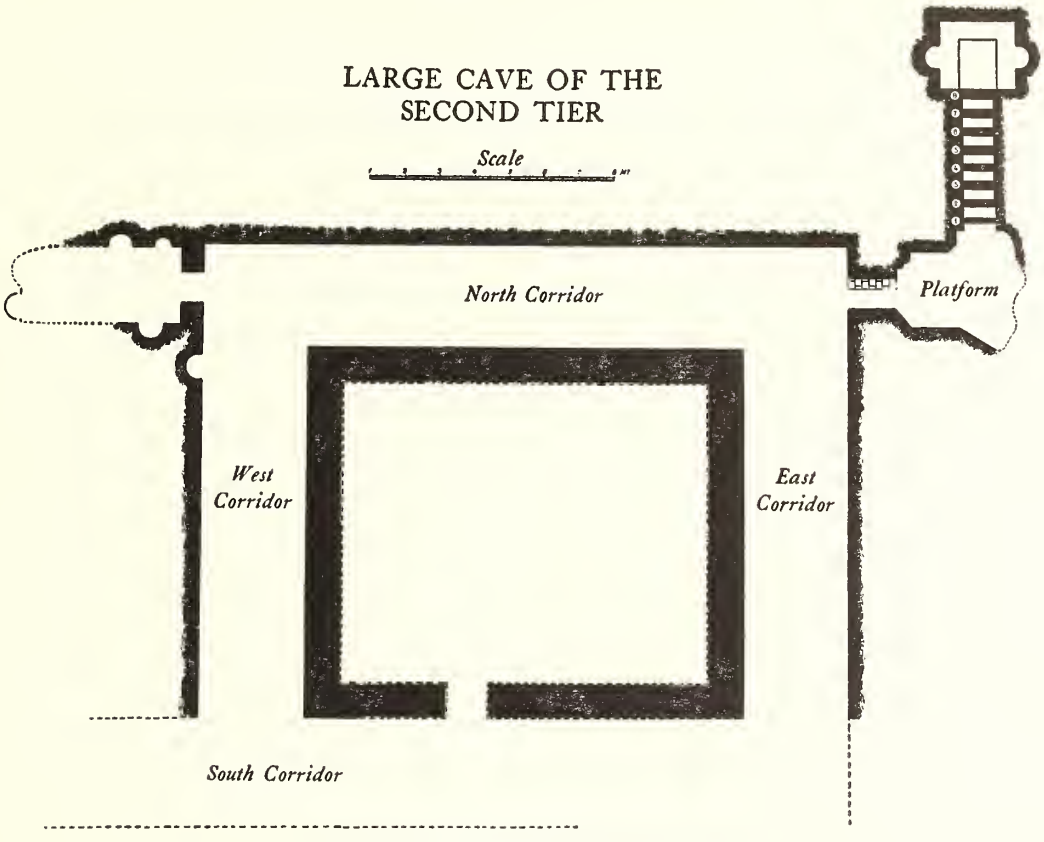


FIG. 6—TERMEZ, GROUND PLAN OF CAVE

Situated half a kilometer from the north-

eastern corner of the citadel, the metal craftsmen's quarter occupied an area of 8 hectares, where buildings of unburnt brick, streets, squares, and water reservoirs were unearthed. Two streets could be traced, one along the eastern and the other along the southern boundary of the quarter. The former divided the quarter from the other part of the city, where a large amount of clay slag, potsherds, and tools employed in pottery-making were found. This was the potter's quarter.

Excavations in the metalworkers' quarter were begun at several different levels. The cultural strata attained a thickness of 5 meters. The upper levels, at a depth to 1.5 meters, were attributed to the eleventh to the thirteenth centuries of our era, the lower deposits to the Kushan period. Many more or less regular palmate pieces of metal, weighing from 500 grammes to 5 kilogrammes, were found on the surface and during excavation. Pig iron served as raw material for the metal craftsmen of ancient Termez. In the upper strata fragments of crucibles (which do not relate to iron production), pieces of alloy and polymetallic ores, as well as copper fragments, all point to the existence of copperware and forges. The presence of jewelers' shops in this quarter was proved by the discovery of special furnaces used in this craft. Three small buildings excavated were evidently used for trading, since they were open to the street on one side. Behind these premises were the manufacturing buildings and the remains of the furnaces and ironware. Other rooms connecting with the stores served as living quarters for the apprentices and workers. Fragments of an arch of burnt bricks have been found beneath these trading premises, which are attributed to the eleventh and twelfth centuries A.D. In the lower strata, more than 1.5 meters beneath the surface, were found shards and coins of the first centuries of our era. In addition, iron moldings similar to those from the upper levels were excavated.

The material obtained shows that manufacturing existed at Airtam during a period of a thousand to twelve hundred years and that pottery-making, the jeweler's craft, and glass and copper work flourished in Termez during the eleventh and twelfth centuries A.D.

One section of the Termez expedition investigated the ancient irrigation system along the Surkhān-Daryā within the precincts of the Termez district. On the right bank of the river were found remains of ancient head structures and canals, one of which near Salavat irrigated the territory of old Termez. On the left bank, in the middle reaches of the Surkhān-Daryā, traces have been found of large irrigation canals leading to Airtam. Potsherds collected on the left bank are similar to those from the lowest levels in the ancient city of Termez and to some from Airtam. These include a thin-walled, engobe pottery, fragments of goblet-like vessels and painted khumī.

The results of the investigations on the irrigation structures and on the pottery excavated give reason to affirm that the irrigation structures on the left bank of the Surkhān-Daryā, requiring large-scale organized labor for their preservation and maintenance, fell into a state of disrepair and neglect about the middle of the first millennium of our era. The direct result was a decline in the life of Airtam and other settlements on the left bank of the river.

The Zarafshān expedition was engaged in reconnoitering and excavating to the northwest of Bukhara in the Kizil Kum Desert. The area under investigation, covering about 500 square kilometers, abounds in the ruins of ancient settlements, castles, the remains of ramparts and irrigation channels, and a large amount of buried material. The ruins of settlements and castles, built of unburnt brick or pakhs, now have the appearance of mounds (tappas), partly denuded as a result of erosion by precipitation, aeolian action, and, sometimes, drifting sand, which has covered a large part of this locality. Several of these mounds, including Besh Tappa and Ayak Tappa, the irrigation channels, and the denuded remains of clay structures lie at the extreme

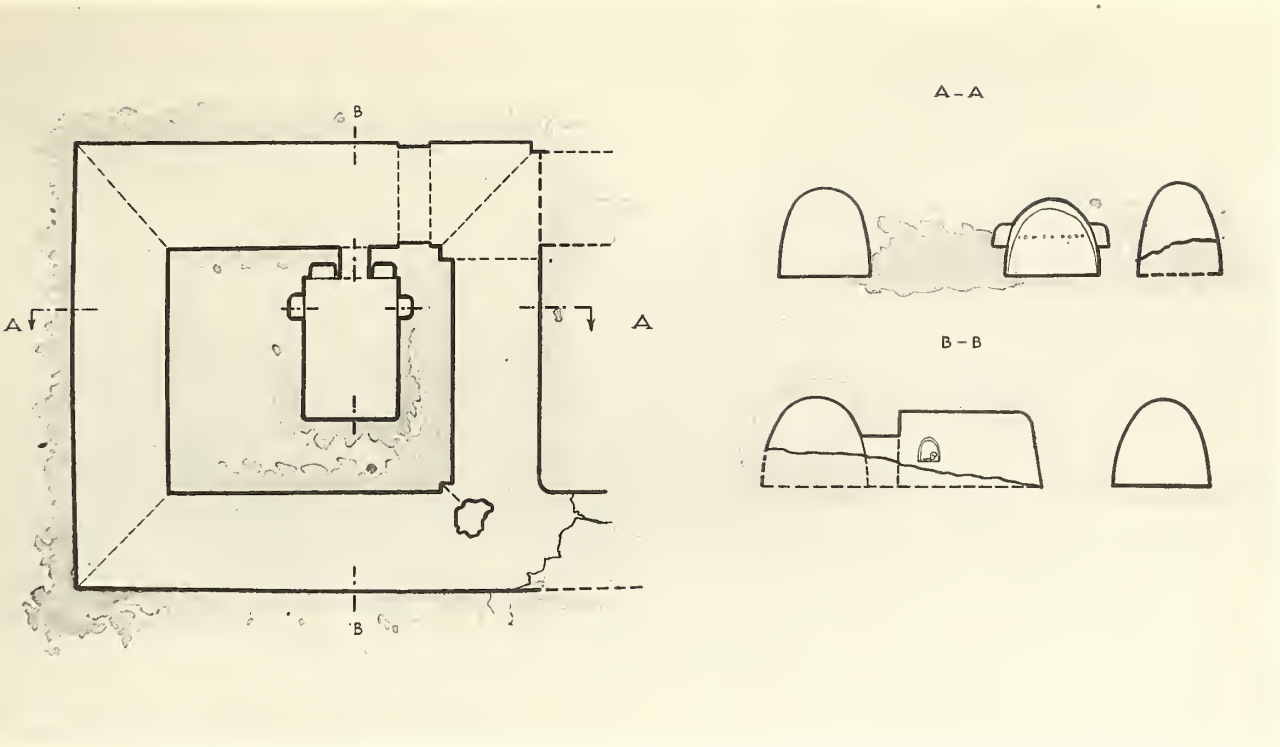


Fig. 7—Plan and Cross Section of Small Cave. Ḳara Tappa

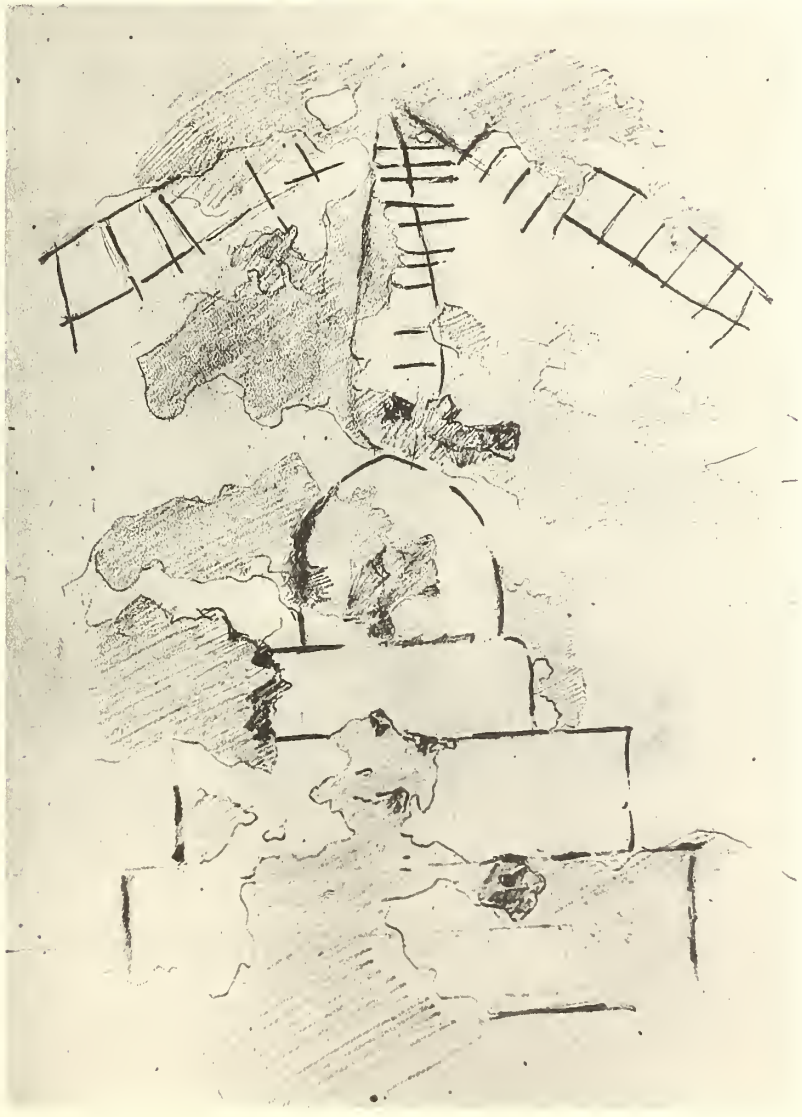


Fig. 8—Tracing on Wall of Cave. Ḳara Tappa

Fig. 9—The Throne Room Site During Excavations. Old Termez

Fig. 10—Palace Courtyard, Reservoir and Water Trough. Old Termez

Fig. 11

Fig. 12

Fig. 13

Fig. 14

Figs. 11–14—Glass Medallions from the Palace, Old Termez, Tenth to Twelfth Centuries

FIGS. 15–16—STUCCOES. BUKHĀR-KHUDĀT PALACE, WARAKHSHA

FIG. 17—STUCCO. WARAKHSHA BUKHĀR-KHUDĀT PALACE

FIG. 18—TERRA COTTA FROM WARAKHSHA

western point of the area investigated and are situated in the desert about 40 kilometers from the boundary of the oasis. The objects from this region appear to be older than those from sites closer to the modern boundary of the Bukhara oasis.

In the district of Besh Tappa and Ayak Tappa was found thin-walled, wheel-made pottery, of finely powdered clay, well fired and frequently coated with a red slip containing traces of complete or partial burnishing and sometimes embellished with a stamp ornament. Associated with this pottery were bronze tribladed arrow heads of Scythian type.

The mounds situated closer to the oasis, including Dingil Tappa, Katta, Khodja Ishan, and Warakhsha, yielded material relating to the period from the eighth to the twelfth centuries of our era. Some mounds directly adjacent to the oasis belong to the period of the sixteenth to the eighteenth centuries.

Excavations were begun at Warakhsha, which was one of the residences of the Bukhār-Khudāts. This city was situated in the desert 12 kilometers west of the modern oasis. Excavations were concentrated on the ruins of a large building on the western side of the citadel, attributed to the fourth and fifth centuries A.D. Within this building, constructed of large unburnt bricks, six rooms were cleared. Numerous fragments of stucco carving, bearing ornamental motifs, were concentrated in one room. The majority of the designs consisted of carvings in low relief of geometric and stylized vegetable meanders, rosettes, and palmettes of rhombics and crosses arranged in a geometric pattern. There was also carving in high relief, some of which merges into true sculpture. This method is used for depicting different themes and for realistic treatment of birds, fish, fantastic beings, a winged horse, a bird with a female head and breast, a male torso, fragments of human figures, trunks of large trees with branches, and carved leaves (*Figs. 15–18*).

A large room with wide clay benches was unearthed in the central part of the building. Traces of a unique distemper painting on clay plaster were observed on one of the walls of this room. The wall is divided into two horizontal parts by a cornice. Above the cornice, on a vivid red-ocher background are to be seen figures of animals, including a deer, tiger, panther, and a horse, shown moving toward the left. The upper part of the panel has not been preserved. Hunting scenes are depicted on the section beneath the cornice. In sequence come the drivers, dressed in short breeches and cloaks, mounted on white elephants; following them are hunters armed with spears and bows. The elephants are outfitted sumptuously with colored saddlecloths and harness. One scene depicts a hunter hurling his lance at a lion that has leaped at him with fangs bared. In another episode a hunter has loosed his arrows at a griffin. The lion is painted in orange-yellow, and the griffin in white; the contours of the figures are outlined in black and brown. Although shadow planes and perspective are lacking the firm painting and the bold strokes reveal the touch of an experienced master. The colors have preserved their freshness, although many parts of the human figures were obliterated in ancient times.

This building, lavishly decorated in stucco work and painting, is identified with the palace of the Bukhār-Khudāts described by Muhamad Narshakhī, a tenth-century historian, who wrote that this palace, built more than a thousand years before his time, had been repeatedly demolished and restored.

Simultaneously, the expedition excavated some trial trenches, the lower strata yielding pottery and other objects dating approximately to the eve of our era and resembling the material from Besh Tappa and Ayak Tappa.

Archeological data and the discovery of artificial irrigation structures give reason to assert that the territory investigated was populous even before the beginning of our era. On the extreme western parts of the site civilization began to die

out about the time of the birth of Christ; the more eastern sections, which are higher than the irrigation systems and closer to the Zarafshān River, continued to exist down to the twelfth century. The reasons for this decline can be found in the upheavals brought about by the dissolution of the slave-owning society and the resultant neglect of the irrigation system, supplemented by the intensive advance of the sands of Kizil Kum on the Bukhara oasis.

II

During the latter part of 1939 the Zarafshān archeological expedition was sent out jointly by the Institute for the History of Material Culture (IIMK) and the Hermitage Museum, Leningrad. The expedition leader was A. ÎA. ÎAkubovskiĭ.[5]

One group excavated at Paikand near ÎAkatut on the Ashkhabad railroad in the Bukhara region. The extensive ruins of Paikand are on a stony prominence in a sandy desert. The shahristān, surrounded by partly preserved walls, occupied an area of 20 hectares. The citadel (kuhan-diz) covered an area of about 1 hectare in the northeastern section of the shahristān, which formed the eastern and the more ancient part of the city; also the western area, in which not only walls, but also towers have been partly preserved, was excavated. The towers, originally of unbaked brick, were later strengthened by a thick layer of large pisé blocks. Remains of the gates were found at the north, south, and west corners of the shahristān. They were particularly well preserved at the place where the inner wall, which bisects the shahristān, meets the south and north walls. This discovery throws new light on al-Madā'inī's statement, endorsed by al-Ṭabarī, that the Arab general 'Ubaid Allāh b. Ziyād at Paikand in the spring of 54 H. (674 A.D.), who was recalled to Iraq by 57 H. (676 A.D.) at the latest and died there in 67 H. (686 A.D.), succeeded in capturing only one half of Paikand in the year 674. V. A. Shishkin mapped the vicinity of the gorodishche; to the west, south, and east it is surrounded by the remains of structures forming the rabāṭ of the town. According to al-Maḳdisī and Narshakhī the town was surrounded by a thousand rabāṭ's, in which during the winter the people from the surrounding villages congregated for defense against the Turkish nomads. The rabāṭs nearest the shahristān served in peacetime as caravanserais and during warfare as outposts against the nomads.

The entire area of the Paikand gorodishche was covered with potsherds, the majority unglazed. The greater part of the pottery belonged to the period from the eighth to the tenth century, although some earlier periods were represented, and some potsherds of the Timur (1336–1404) and Timurid (fifteenth century) periods were also found. The most common type of unglazed pottery was decorated with stamped and incised ornament. Surface finds included also many ornamented lids of cylindrical vessels. Sasanian elements were discernible in the glazed sherds of the eighth to the tenth century. Some sherds closely related to the Afrāsiyāb type of pottery are unique.

Two preliminary excavations were also conducted at Paikand. The first trial trench reached virgin rock at a depth of 3.5 meters. The most important object found was a copper coin of the Sasanian cycle, probably of Sogdian origin.

[5] These notes were excerpted from A. ÎA. ÎAkubovskiĭ, "Zarafshanskaîa arkheologicheskaia ekspeditsiia 1939" ["The Zarafshan Archeological Expedition, 1939"] *Kratkie soobshcheniîa o dokladakh i polevykh issledovaniîakh Instituta Istorii Material'noĭ Kul'tury (IIMK)*, IV (1940), 48–52. The "Brief Communications on Reports and Field Investigations" of the Institute for the History of Material Culture (IIMK, formerly GAIMK) in Leningrad was received from Vsesoîuznoe Obshchestvo Kul'turnykh Snosheniĭ ("All-Union Society for Cultural Relations with Foreign Countries," known as VOKS, Moscow). See also A. ÎA. ÎAkubovskiĭ, "Expédition archéologique de la vallée du Zaravchan en 1939," *Travaux du Département Oriental, Musée de l'Ermitage* (Leningrad, 1940), II, 51–69 (in Russian), 69–70 (French résumé), 2 diagrams and 12 pls.

The second excavation, conducted in the citadel, was not completed. The finds from the upper strata included some Timurid sherds, dating from the fifteenth century. It is supposed that at that time a fortress had been constructed over the ruins of the Paikand citadel.

During excavation of a potter's kiln in the eastern part of the shahristān two Samanid coins were found: one coin of Naṣr b. Ahmed b. Ismā'īl, called al-Sa'īd, who reigned from 301 to 332 H. (913–43 A.D.), which was minted in Bukhara, and the other of 'Abd al-Malik I b. Nūḥ, who reigned from 343 to 350 H. (954–61 A.D.). Accordingly, the pottery associated with this locality could be dated in the tenth century.

The cleaning of the kiln resulted in the discovery of several animal effigies. Beneath the kiln M. M. D'iākonov discovered a dwelling complex with a small courtyard containing a pit-shaped bread oven and a trough built of baked brick. In one house a coin of Abu 'l-'Abbās al-Saffāḥ, minted in al-Kufa in the year 133 H. (750–51 A.D.), was found at a depth of 75 centimeters. The typical ware was covered with a dark green glaze, decorated with a stamped or incised pattern reminiscent of Sasanian style. The study of this pottery, showing survivals of Sasanian art, will fill the gap existing between the pre-Muslim period (seventh century) and the Samanid period (tenth century).

Several silver coins and 140 copper coins were found on the surface at Paikand. A. A. Bykov identified the following groups: (1) Kushan copper coins of the first and second centuries A.D.; (2) probably Sogdian coins of the Sasanian cycle, with the characteristic concave surface, and a representation of an altar on one side and a human head on the other; (3) late Sogdian coins of Chinese form with square perforations in the middle of each coin, one of which bore the name of Ṭarkhūn;[6] (4) copper Samanid coins attributed to the tenth century; (5) coins of Ilek-Khāns; (6) Timurid coins; (7) intrusive Bukharian coins of the nineteenth century.

The distribution of coins suggests that the town flourished under the Samanids and declined under the Ḳarakhānid Ilek-Khāns. The presence of the Kushan coins of the first century A.D. indicates the existence of a commercial center at Paikand during that period.

The second section of the expedition, under the leadership of G. V. Grigor'ev, excavated at Tali Barzu gorodishche, 6 kilometers south of Samarkand. According to the Arab geographers this area contained the richest estates and fortified castles of the native lords (dihḳāns). In this region belonged also the rich Māimurgh domain, including the town of Rīwdad, the master of which was a rival of the king (Ikhshīd) of Samarkand in the fifth and sixth centuries.

The Tali Barzu site, excavated since 1936, is a square gorodishche with an area of 5 hectares. The central part of the hill is elevated 18 meters above the level of the plain. The gorodishche consisted of a complex of buildings belonging to various periods. During the course of three years Grigor'ev established the following six cultural strata at Tali Barzu:

I. First half of the first millennium B.C.
II. Fourth century B.C. (Achaemenian period).
III. Third to second centuries B.C. (Hellenistic period).
IV. First century B.C. to second century A.D. (Kushan period).
V. Fifth to seventh centuries A.D. (late Sasanian period).
VI. End of the seventh to the beginning of the eighth century A.D.

The finds include Sasanian pottery with stamped images of pomegranates and Sogdian coins of the seventh or the eighth century. A hoard of twenty-nine Kushan silver coins, with-

[6] H. H. Schaeder suggests that this is a title and not a name ("Samarḳand," *Encycl. Islām* [Leyden, 1934], IV, 129).

out inscriptions but with a human head on one side and an archer on the other, was also found.

An excavation conducted in the potters' quarter at Kāfir Ḳal'a, 5 kilometers south of Tali Barzu, yielded many Sasanian objects. The pottery was stamped with pomegranate designs and had flakes of mica on the surface. Human and animal figurines of terra cotta and a clay slab with an effigy of a human head in high relief were unearthed.

Excavations were conducted also at five other sites. A fragment of a storage vessel bearing the image of Gopat-Shāh (the bull with a human face) was discovered. This vessel is being described by C. V. Trever in a special study.[7]

Another of these excavations brought to light anthropomorphic heads of Hellenistic type. These effigies had served to decorate the handles of vessels.

HENRY FIELD and EUGENE PROSTOV

"PAGAN AND CHRISTIAN EGYPT." AN EXHIBITION

The exhibition held at the Brooklyn Museum from the end of January until early in March, 1941, represented the first attempt at a comprehensive showing of Coptic art in the United States, and the effort met with general praise and approval. While the material was very simply and hence most effectively displayed, because of the difficulty of assigning precise dates to many of the pieces included, no effort was made to follow a historical continuity in the arrangement of the works of art—executed in the period from the first to the eleventh centuries of the Christian era. An easy calculation demonstrates the importance which the show had both to the scholarly specialist and to the casual visitor: of the 271 objects displayed, 218 had not received previous notice in print, and of this latter number some 127 pieces were illustrated in the catalogue of the exhibition.

The largest category of the exhibits was that of the textiles. The amount of such material in large and small museums and in private hands is really astounding, and this sheer weight of numbers suggests that a study of the woven pieces offers the soundest basis for clarifying the characteristics of Coptic art. Just as noteworthy were objects of less familiar character: basalt portrait heads, multicolored marble vases, and a variety of objects in bronze. Pieces from the great museums did not always command the most attention, for most important material came from less accessible sources, such as Goucher College, Cooper Union Museum, Pratt Institute, Textile Museum of the District of Columbia, and the collections of Dr. W. R. Valentiner and Professor V. G. Simkhovitch—to name only a few. Since the close of the exhibition the Brooklyn Museum has been able to acquire a number of the fine privately owned pieces for its permanent collection.

The catalogue of the show was handsomely printed and contained excellent illustrations. It included two compact and valuable sections of text by John D. Cooney and Elizabeth Riefstahl, who were the motivating forces of the exhibition. The articles call attention to the problems of Coptic art and stress the fact that the Coptic period must be considered from a number of different angles, and that the general political, economic, and religious manifestations of the time supply the clues needed in drawing up a comprehensive account of the artistic activity of these centuries. The problems stressed have a familiar sound: what period and area should the term "Coptic" designate; what are the sources of Coptic style; how can Coptic style be characterized? The last point is most important, for it is strikingly true that only very limited efforts have been made to define Coptic style, i.e., to isolate the peculiar features of composition, drawing, position of figures in relation to the picture plane, use

[7] "Gopat-Šah le Roi-berger," *Travaux du Département Oriental, Musée de l'Ermitage* (Leningrad, 1940), II, 71–85 (in Russian), 86 (French résumé).

of perspective, types of figure and facial drawing, technical means, and all other factors which result in the distinctive appearance of these works. Since these problems concern everyone interested in the general field of Near Eastern art, they will be made the subject of the present review which attempts, in narrow compass, to summarize recent evidence relating to these questions and to suggest a specific field for further investigations.

The objects on display were presumed to have been executed in Egypt and are assigned to both pagan and Christian sources. Normally, the works are referred to as Coptic. What connotation should the term Coptic carry? The word Copt stems from *Aegyptios*, the Greek geographical term as corrupted to *Guptios* and then to modern Egyptian *Gupti* and hence Copt in European tongues. The term might be applied to all artistic production from the first century A.D. until the years of the Arab invasions, for there is no valid way by which the artistic productions of these centuries can be separated into such groups as nonreligious, pagan religious, or Christian, since only a very small fraction of objects which were undoubtedly produced by ardent Christian workmen illustrate Biblical or hagiological scenes. This rather curious situation is one which prevailed throughout the eastern Mediterranean world at this time. The fact that fervent Christian communities may have produced little "Christian" art is witnessed by excavations at several sites in Syria, which have revealed a paucity of material decorated with purely Christian subject matter. If it is advisable to assign narrower limits to Coptic art, the third century can be chosen as the starting point, for by this time Christian motifs had made their appearance in all corners of the Roman world. The period should include all artistic production in the Nile Valley area to a century or so after the Islamic invasions, since it was a number of decades before sufficient hostility to Christianity was fanned in the hearts of the invaders for them to carry out the destruction of churches. After the middle of the eighth century the term Coptic should be used to apply to works of Christian subject matter; particularly to the paintings of the obscure and long-lived monasteries in the upper valley.

The sources from which this style of pagan and Christian Egypt emerges are commonly considered to be numerous, elusive, and obscure. Coptic art is not ranked as a major monumental style, yet few substyles can display as marked a dependence upon multiple antecedents. Most speculation regarding the sources and character of the style have been distressingly vague. Thus, one can read that Coptic art "rose from the conflict between indigenous art and invading Hellenism," was "a vital re-awakening of the ancient national spirit," appeared as "a fusion of Egyptian, Asiatic, Hellenistic, and Christian influences," or finally, that "as Coptic Egypt was a provincial backwater, so was its art." Such statements have definite merit as attempts to reduce complexity to simple terms, but they are at the same time too general and too remote from a direct consideration of the objects themselves.

It might appear that one way of isolating the distinctive elements of Coptic style would be to determine which of the artistic media seemed to be most characteristic of the period and then subject the objects of that medium to a detailed stylistic analysis. At first sight it might appear that the medium would be weaving, since textiles form the great bulk of the preserved material. Although the textiles come primarily from Lower Egypt, there is no assurance that they were woven in ateliers in the vicinity of the cemeteries in which they were found; indeed, the consensus of opinion is that a considerable percentage of them were loomed outside of the borders of Egypt, a fact which is mentioned in the exhibition catalogue and which again draws attention both to the problem of defining "Coptic" art and to the title of the exhibition itself. Elements of architectural construction and decoration of stone elaborately carved furnish useful indices as to

style since the very bulk and weight of the material may imply that it was used near its place of execution. Running counter to this assumption is the current theory of Kitzinger that the best of Coptic sculpture is of imported style, and, indeed, the objects do support this assumption, notably a most distinctive piece of architectural carving for many years in the Cairo Museum, which is now matched by fragments excavated at Antioch. Wood carving mirrors the patterns and technique of work in stone, whereas the bronzes, as objects in the round, are more distinctive in appearance, but are not present in sufficient quantities to be considered as a group. The mural paintings of Upper Egypt offer a fairly homogeneous group and should provide the attractive possibility of establishing the difference in style, assumed by nearly all scholars, between the provincial work of these painters and the technically finer work of the artisans of Alexandria and the Delta. It should be noted, however, that the repertoire of the paintings is quite comparable to that of the textiles, wood and stone carvings, and ivories thought to be made in the Delta region. In fact, all media show such consistency in pattern forms and subject matter that no single group can be separated from the rest. Further, the distinction based on merit of execution between the products of the Delta and Upper Egypt seems dubious, especially when actual comparisons are made between pieces whose locale is fixed and others traditionally assigned to Upper or Lower Egypt.

The fact is that as recent excavations and the assemblage of scattered objects in exhibitions such as the one under discussion bring to our attention great masses of material from Egypt and the fringes of the Mediterranean the possibility arises that Coptic art and style is not peculiarly distinctive of either Upper or Lower Egypt or even of Egypt as a unit. The art seems characteristically Egyptian only inasmuch as certain media were developed at the expense of others. The excavations of late years in Syria and Palestine have so expanded the amount of comparative material available for a consideration of art in the late Roman world that we are now compelled to consider style in terms of the expressive production of wide areas and the accepted concept of the growth of early Christian art has been greatly modified. It may now be possible to postulate a "littoral style," which was common to the eastern fringes of the Mediterranean from the third through the eighth centuries: a style characterized by a fixed repertoire of fairly limited range and in which—as far as extant objects witness—although the art was produced in ardently Christian communities, pagan motifs predominate. Once the repertoire and technique of this style, the cohesive expression of an historical period, are established, attention can be concentrated upon the various centers in which it was practiced, and local idiosyncrasies of execution and subject matter will be easily detected. As an example of successful work in this direction may be cited the studies made by Pfister in which he established a number of textile subjects as being of obvious Egyptian and Nilotic origin. Such an example demonstrates the program of studies: the Nilotic scenes establish a provenance for certain pieces, these textiles are treated to technical analysis and the observations concerning distinctive features in looming common to the groups are conclusive enough to place identical weavings which portray less distinctive subject matter in the same local group and hence in Egyptian ateliers. In more general terms the approach to textiles and other works of art should be as follows: first the art historians assign a distinctive subject group to important urban areas, basing their findings upon local landscapes, long established regional types, the prominence of certain local deities, etc., working as much with literary material of contemporary date as by direct comparison of objects. The textile experts point out the peculiarities of the regional weaves and, finally, pieces of similar weave are assigned to augment the original groupings.

It becomes increasingly clear that well-thumbed pattern books formed the backbone of this "littoral style." Actually, in one geographical area mosaics might be the favorite medium and in another area textiles, but the repertoire remained common and constant. The scenes and patterns of the Antioch mosaics offer a splendid opportunity for establishing the repertoire of this style, and the intensive studies now undertaken at Princeton along these lines should bear early fruit. Mosaics of the third and later centuries as they come to light in the far flung sites of the ancient world reveal a distinct cleavage in style between the floors found in Italy and France and those of North Africa, Syria, and Palestine, although there are certain stylistic traits common to North Africa and Italy. For the most part ornamental patterns characteristic of the Syrian mosaics and the Egyptian textiles never were adopted on the Italian mainland. The patterns of the eastern Mediterranean mosaics are in a large part indigenous, with certain of them standard Hellenistic motifs which had been modified in a manner more in keeping with the tastes of the general period. Certain patterns, such as the common diagonal square or lattice pattern, were used in textiles, mosaics, and stone carving, and yet the pattern is one which logically results from the technique of the loom. A point to be emphasized is that many of the patterns which must have made up the pattern book of this style owed their origin to the manner in which fabrics are woven. The missing fabrics are represented by occasional pieces such as the cut-pile woolen rug from Egypt in the Metropolitan Museum, assigned to about 400 A.D., which displays a highly developed technique and suggests that certain patterns were prevalent in textiles at least as early as they are found in mosaics of the coastal regions.

Mosaics and textiles show a comparable rectilinearity in the bounding lines of their forms and patterns. The use of square or rectangular stones and the right angle crossing of the threads in the loom establish a common denominator of appearance. The mosaics do reflect a conscious attempt to produce flowing and more naturalistic forms, and the presence of a similar technique in the frescoes at Bāwīṭ illustrates that this same approach was common to Egypt. This possibility of a greater freedom of design and execution in murals and pavements may explain why certain subjects of the Syrian repertoire are not found in Coptic textiles. A typical subject is that of the large compositions in which many animals are freely scattered about the area; the animals may be pursued by hunters or they may represent a menagerie of unusual and exotic species. Often rectilinearity becomes the predominant feature of the compositions: Figure 1, a hanging in the Textile Museum of the District of Columbia, and Figure 2, a mosaic floor from Antioch, provide good examples. Both may date from the fifth or sixth century, and both have the strong framework of the diagonal square pattern with zoomorphic, anthropomorphic, and vegetable forms within the square. The Antioch floor is a better illustration of the development of the pattern itself—strands of naturalistic flowers which through repetition were debased to bands of alternating colors. Beyond the scope of this report is the assumption that the origin of this design is the floral-strewn costumes of Sasanian Persia and that it becomes less recognizable the further it is transported from its point of origin.

It seems perfectly logical that certain of the urban centers should have emphasized particular media, and yet another factor must be considered before one accepts the statement that the principal art product of Syria was mosaics and that of Egypt was textiles. In Egypt the periodical inundations and the difficulty of securing a good rock or gravel bed discouraged the use of mosaics, while, on the other hand, the burying grounds located above the flood level preserved the fabrics in hot and dry sand. In Syria the damp climate destroyed these materials except at such semiarid sites as Palmyra, so that a knowledge

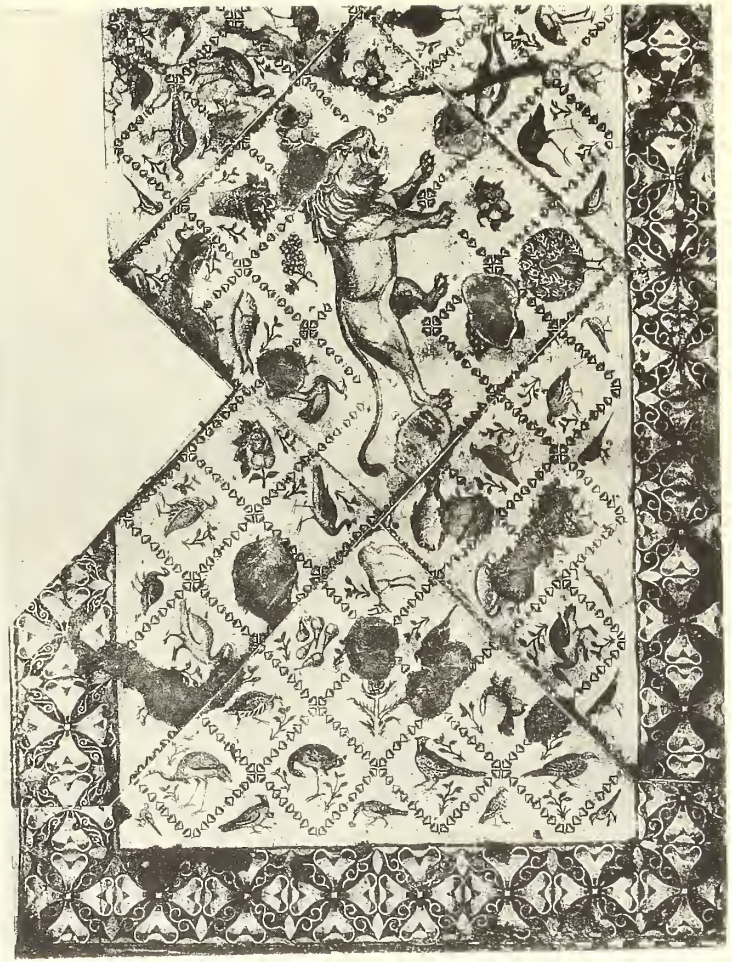
of the textile art of Antioch and other related centers must be recreated from pieces exported to places where they have been preserved.

How was the "littoral style" developed and how did it establish a predominance in this wide locale? In the opening years of the Christian era the economic power of the Roman Empire had begun to shift from Italy to the east and the universal state gradually became all-embracing to the extent that its citizens comprised racial, tribal, and national groups of endless variety and complexity; groups which had an "oriental" cast and in which Greek rather than Latin was the principal means of communication. The guiding policy during and after the long years of the imperial peace was to push the bounds of the empire ever eastward, the more distant the outposts the greater the assurance of continued internal tranquility. The great harbor cities held the key to both economic growth and prosperity and to military communications and in this category Antioch and Alexandria were predominant. Alexandria was not closely tied to the more remote interior, for the reaches of Africa were hostile and impenetrable and offered no considerable access to commercially valuable regions, but Antioch was the emporium from which contacts of every kind were maintained with the limits of Hither Asia. The trade routes and military paths led inland from Syria, and along these roads passed the legionnaires bringing back their distorted interpretations of the manifold religious cults of the interior, along them came the fabulous products of the East and even the elements of artistic creation—subject matter, a fluid manner, and certain precise technical skills. Antioch and Alexandria had a related interest and development in business and the arts and were bound together by the highway of the sea. Specific patterns and motifs could be cited in quantity to prove this connection in the arts, and these examples would also demonstrate the movements of forms and ideas from the east to the west. A very familiar and characteristic pattern is that illustrated in Figures 3 and 4, the former a section of a limestone frieze recently acquired by the Brooklyn Museum through an exchange with the University Museum of Philadelphia and the latter the border of an Antiochian mosaic. The treatment of this general category of birds, animals, or human figures within the compartments of foliage scrolls is subject to considerable variation. On one hand the scroll may send out numerous twisting tendrils and the figures may overlap the scroll so that the design expands into every part of the area. On the other hand emphasis is placed upon a tightly constructed scroll of uniform thickness with the figures constricted within its compartments. In this type the shapes of the pattern areas and the pattern voids are set off in sharp contrast. The examples shown represent moderate, not extreme, cases of this difference in approach and naturally the freer one is considered to be the progenitor of the formal type and also closer to the source of inspiration in the East.

These Christian centuries were a time of fundamental change in art, when Hellenistic forms were to give way to Byzantine ones, with all the concomitant features of colorism replacing plasticity, linear expression triumphing over three-dimensional form, rhythm succeeding balanced composition and abstraction, and stylization placing emphasis on spiritual content rather than on naturalistic representation. Hither Asia—whence came the nucleus of the littoral style—did not actually institute such changes, which were rather the result of an altered universal outlook toward the features and fancies of the visible and invisible worlds, but that region did supply specific motifs and the general artistic attitude that proved to be in perfect harmony with the spirit of the times. While the traditional aspects of religion and culture were being drastically modified by a relentless current of change, the great cities came to be the staunchest upholders of tradition in the arts and the familiar and tried in daily life. These areas represented the sturdy

Courtesy, Textile Museum of the District of Columbia

Fig. 1—Hanging. Fifth or Sixth Century A.D.



Courtesy, Committee for the Excavation of Antioch and Its Vicinity

Fig. 2—Part of Mosaic Pavement from Antioch. Baltimore Museum of Art

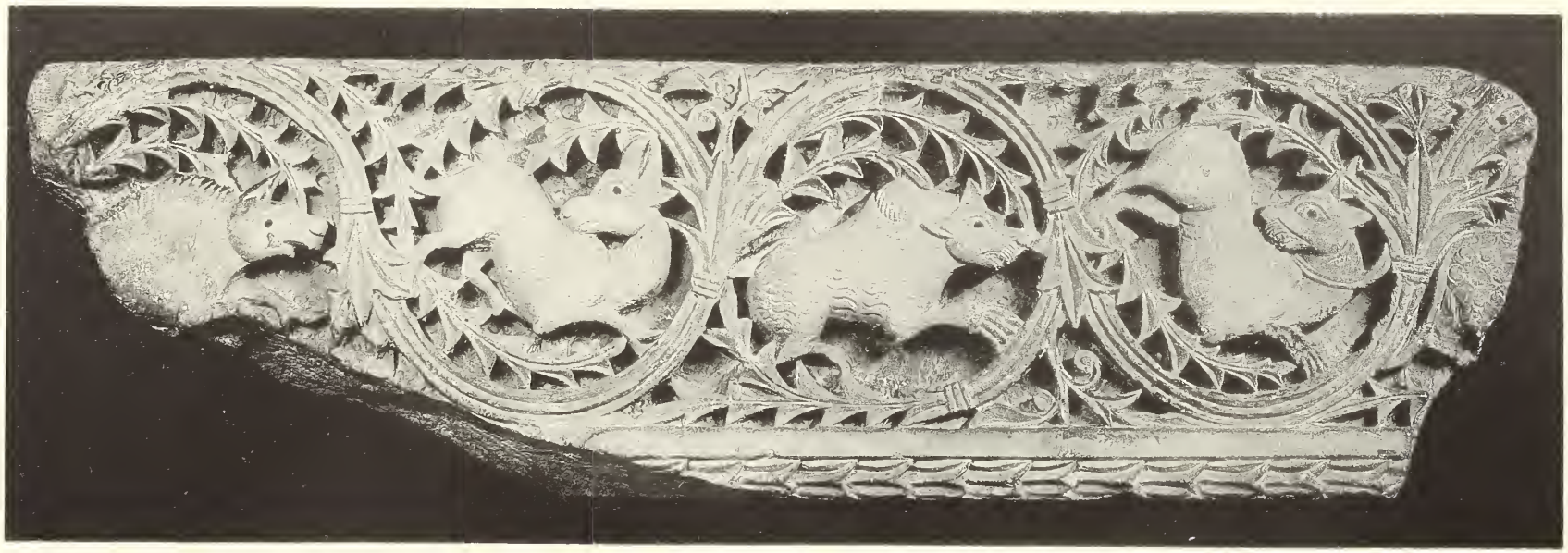
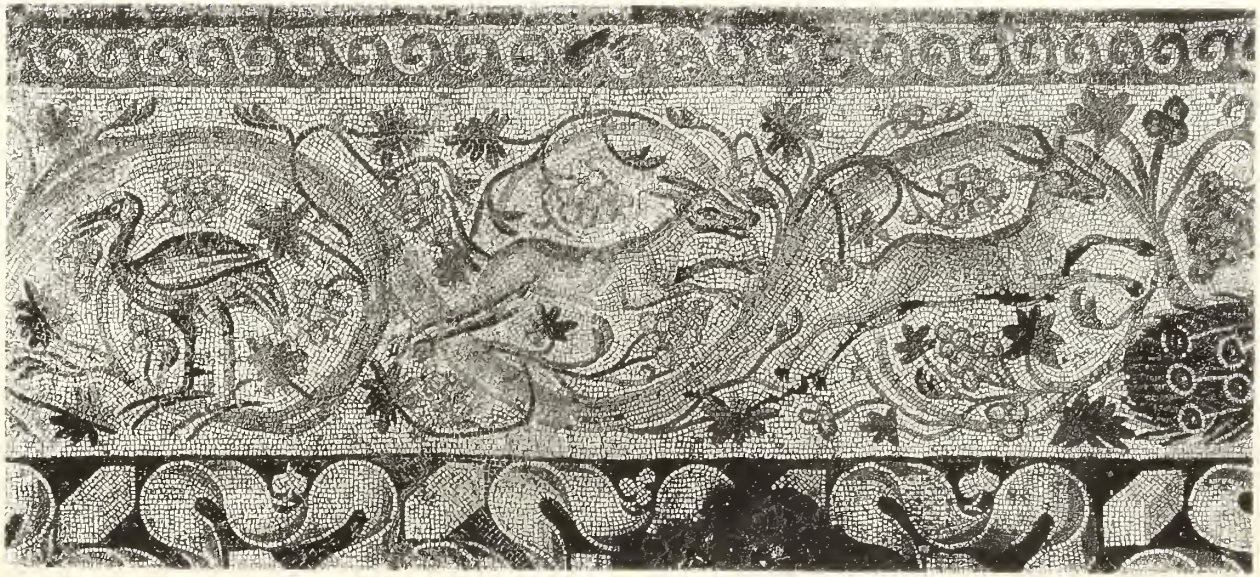


FIG. 3—LIMESTONE FRIEZE, FIFTH CENTURY A.D. BROOKLYN MUSEUM

COURTESY, BROOKLYN MUSEUM



COURTESY, COMMITTEE FOR THE EXCAVATION OF ANTIOCH AND ITS VICINITY

FIG. 4—FLOOR MOSAIC FROM ANTIOCH, WORCESTER MUSEUM AND THE BALTIMORE MUSEUM OF ART

conservatives in an age of bewildering social upheaval. If any variation between the reaction of the great cities can be detected, or even assumed, it may well be that Antioch was more prone than was Alexandria to foster the decorative attitude which would culminate in Byzantine style. In all the cities the break with the Hellenistic past was never the sudden and decisive event that it was in the smaller communities and the more isolated countryside. In the remote regions of Palestine, Mesopotamia, Asia Minor, and North Africa changes in mode of representation and the alteration of well-established patterns and motifs were much more immediate and very much more drastic. In these regions no strong cultural heritage supplied a focal point of resistance to the prevailing spirit of change. Thus, Coptic art, here and now defined as one expression of the littoral and city style in the media of weaving, painting, and carving, is a reflection of the conservative branch of the art of the period, and in spite of the multiple indications of uneven, wavering execution and of the dissolution of composition into isolated units it was a vital factor in prolonging the life of Hellenistic style. Regardless of the fact that many paintings and carvings were executed or installed in obscure localities and in spite of a real lack of monumentality, the art did represent the enlightened and stable factors of the urban centers in contrast to the more primitive expression of the areas farther inland or more distant from the great Hellenistic cities.

The elements which amalgamated into the common Alexandria–Antioch or littoral and city style can be assigned to three main currents: (1) the remnants of the Hellenistic heritage, (2) the newly developed and newly popular themes and pattern forms, and (3) the patterns and designs moving westward from the confines of Hither Asia. Such a postulate is not mere speculation, for in a longer study it would be possible to isolate a number of specific themes, as for example that of the representations of personifications of abstract qualities or of many pattern forms, that are found in Syria and Egypt with increasing frequency from the third century onward, while they occur rarely or not at all in Italy. The artistic influences of which such examples are the reflection passed from Antioch to Alexandria. The route led from Iran and Mesopotamia, with branches in Asia Minor, through Dura and Palmyra to the Syrian littoral. Dated monuments support this movement. A typical example of both the direction of the movement and the breakdown of style in isolated areas is the fact that a mosaic found in Palestine dated only a few years later than one from Antioch has the same essential composition and pattern elements, but the style already has disintegrated in the hands of provincial workmen. The great cities naturally attracted the best craftsmen and had the most active ateliers. As the pattern books they were establishing and using passed to the hands of workmen in Djarash, Amman, and Baalbek the style disintegrated into blocky and hasty renderings of plant and animal forms and to an extreme simplification of the geometrical motifs. The mere fact of this demonstrable disintegration is part of the evidence for strong artistic connection between Syria and Egypt via the sea, for the art of Palestine in all these years is hesitant and backward, and if the land route down into Egypt had been important this would not have been the case.

In a highly commercial and competitive era, one in which the surviving documents deal with banking, taxes, landed estates, and law suits, art itself was a commercial undertaking, and the large ateliers of Alexandria and Antioch were certainly alert to specific demands and vogues and in a position to maintain a direct exchange of artisans to keep the output in either center at desired levels. Several qualifications must be made against the assumption that the best craftsmen worked only in these and other littoral cities; for example, the best stone cutters were still trained in Asia Minor and spread their craft from that

region. Also certain artistic products were produced for export as well as for home consumption. Thus, textiles found in Egypt which experts consider were not woven in the country might equally well have been made in another region for local tastes or woven in another center specifically to meet Egyptian tastes and primarily for direct export.

That the repertoire of Alexandria and of Antioch was very similar, was restricted, and was one in which purely Christian subjects were few in number may be established more specifically by listing the traits of this repertoire as they appear in textiles and mosaics. General groupings are:

1. Geometrical or abstract ornament
2. Naturalistic ornament
3. Animals and humans in the compartments of vine scrolls
4. Repeat patterns embracing large areas
5. Personages used to represent abstract virtues and qualities
6. Scenes of Christian subject matter
7. Scenes of pagan heritage: scenes from mythology and pagan cults

All these categories are well displayed in the objects shown at the Brooklyn Museum and few of the pieces included fail to fit into one of these groups. With relation to the paucity of Christian subject matter a final word of warning may be given. Many of the textiles have scenes or bear fragments of inscriptions which suggest a Christian character, but both scenes and texts may be associated with pagan cults, in particular those of Isis and Osiris, and it is well known that these survived in Egypt until the Arab invasion. Thus, a textile bearing the words "life" and "light" may be Christian or it may equally well be associated with the Isis legend, and two plaques identified in the catalogue as representations of St. Sisinnios and St. Thekla may be either pagan in subject matter or Christianized versions of established pagan compositions. Certainly, scholars concerned with the late survivals of the pagan cults will find rich material in these textiles and carvings.

As the Coptic style blossomed into the Byzantine it carried over into early Islamic art. A number of the fabrics in the exhibition are Islamic in date, and they were certainly executed in Egypt. This raises the interesting question as to what changes in style were introduced along with the Arab invasions. It cannot be said that the Islamic pieces are more sketchily rendered, less studied in design, or woven with less skill than fabrics of the fifth and sixth centuries. All during the Coptic period a clear distinction can be made between the products of the best ateliers and the much more angular, crowded, and distorted figures and patterns executed by the less skilled weavers. The Islamic pieces may be characterized, aside from their inscriptions, by the use of figures in a seated position with legs crossed, by costumes in which interest is centered on an all-over pattern instead of on folds into which the garment falls, and by changes in the manner of representing growing forms. The problem of just why and how such features appear in early Muslim art remains to be considered as part of the neglected subject of Islamic iconography.

DONALD N. WILBER

THE DATING OF COPTIC TEXTILES IN THE LIGHT OF EXCAVATIONS AT DURA-EUROPOS*

The majority of preconquest Egyptian textiles date from the fifth and sixth centuries A.D. One seldom sees a dating previous to the fourth century. This applies to textiles in both European and American museums. Recently, there have been found textiles in both tapestry and pile technique excavated at a site in extreme eastern Syria on the west bank of the Euphrates. This town, Dura-Europos,[1] has a well-authen-

* This note was written and submitted in April, 1941.

[1] Expedition of Yale University—Dura-Europos excavation begun October, 1928; find made February 22, 1929.

ticated terminal date of 256 A.D. Even this date is probably too late for the textiles found there, for the reasons given below.

Many of these weavings, if decorated at all in color, are done in the tapestry technique. In the beginning this tapestry technique must have appeared in coarser and simpler weavings than later expert work could produce, for even the simplest tapestry shows an advanced state of the textile art. Thus, refinements, such as shading by means of slightly different colored knots, must have come as a later development. Likewise, the development of the pile technique, that is, the usual rug or carpet consisting of warp, weft, and knotted pile, was undoubtedly a development which came long after the simple weavings of warp and weft threads.

From the excavations at Dura-Europos come examples of shading hardly equaled by any Egyptian textiles. In fact, several pieces are equal to the famous fish piece in the Lyon Museum. Likewise, there has been found at least one example of the pile technique, though the specimen is so dry it would be difficult to analyze the precise kind of knot used.

Dura, in the latter part of its existence, before its destruction in 256, was a Roman military camp. One of the finest shaded pieces shows a spacing of design which is reminiscent of that found in the mosaic tiling of the second century rather than in work of the third century. Dura was never known as an art or industrial center. Hence, it would appear that pieces found there were probably brought from elsewhere. If fine textiles were made at Dura at all, it is thus more likely that they were made at a time considerably before its destruction. Importations from other centers of fine weaving probably arrived in Dura in its more prosperous days. At that time also, Dura was nearer a caravan route than in its later days, when the caravans came directly across Syria and more to the south, instead of down the upper reaches of the Euphrates.

It is difficult to suppose that refinements in tapestry weaving or pile weaving were developed at or exported to Dura until after such pieces were made in considerable quantity at the larger and better known centers of Syria or Egypt. Since it is probable that these pieces were importations, it is most unlikely that they were known at the inconspicuous town of Dura until long after they were known in Egypt or in the main cities of Syria.

In view of the above, it is most likely that these pieces came from Egypt or Syria proper. This being the case, how can one reconcile the dating of preconquest Egyptian (or Syrian) pieces as of the fourth, fifth, and sixth centuries, when they existed in Dura some time previous to the middle of the third century, when the town was destroyed.

More might be said in regard to the dating of textiles showing strong Greek influence. These pieces are hardly ever given a date earlier than the third century. But Greek colonies in Egypt began as early as the sixth century B.C. and declined with the Roman occupation in 30 B.C.

It would be hard to explain why the Greek influence shows only in examples made after the second century A.D., which is long subsequent to the Roman occupation. It is true that the Roman influence lasted a shorter time in Egypt than did the Greek, and yet pieces in existence showing Roman influence are given dates of the third and fourth centuries—a long delay from 30 B.C.!

I leave the explanation of these facts or the statement of arguments which do not agree with my conclusions to scholars who know more about the history of the times, but, in view of the discoveries at Dura, I shall be interested to learn the reasons which can make logical the present dating.

GEORGE H. MYERS

PRE-MAMELUKE ṬIRĀZ IN THE NEWBERRY COLLECTION

Professor and Mrs. P. E. Newberry, of Surrey, England, possess a large and famous collection of textile fragments found in Egypt. It is unique for its complete representation of early painted and printed fragments of all periods and for the profuse number of embroideries which are present, many of them of the Mameluke period. Professor and Mrs. Newberry began their collection of fragments, from al-Fusṭāṭ and other places in Egypt, in the eighteen-nineties, though they have acquired many of the pieces during the last fifteen years.[1]

The subjects of the present article are limited chronologically rather than technically. A few ṭirāz have been chosen which date between the Islamic conquest of Egypt in 21 H. (641 A.D.) and the beginning of the Mameluke period in 650 H. (1252 A.D.). These are perhaps not as well known as the later pieces in this very large collection. All the pieces selected were, apparently, found in Egypt, though there is reason to think that some originated in other parts of the Near East. For the purposes of definition, ṭirāz is taken to mean any embroidered, woven, or painted ornament on a garment or hanging of the Islamic era, especially an Arabic inscription on a textile, or an ornament simulating such an inscription. The term ṭirāz has also come to mean the piece of material so ornamented. The woven designs on these early pieces are generally of tapestry technique.[2]

The earliest piece chosen (*Fig. 12*) is a wool tapestry band with a bold scroll pattern in fine fresh colors: blue, red, greens, and purple (blue and red strands twisted together). The warps are of cream-colored wool.[3] As far as is known, all fabrics entirely of wool, with the exception of some fabrics with a peculiar and distinctive type of calligraphy from the Faiyum, come from Upper Egypt, which was noted for its woolen stuffs. No all-wool fabrics carrying a dated inscription are known.[4] But the design is reminiscent of pre-Islamic Coptic pieces, and the bold treatment of the scrolls suggests known pieces made during the reign of the Tulunid princes of Egypt (254–92 H. [868–905 A.D.]). Therefore, it seems justifiable to date this piece to the ninth or tenth century A.D.[5]

The next group of textiles, chronologically, is of the traditional type of the tenth century from Egypt or the Near East. Generally, this group has no ornament except for a band of simple calligraphy in one color, on a plain or glazed uncolored linen (or cotton in the case of Mesopotamia and Persia) ground. The inscription usually contains the name of the reigning caliph, and sometimes the place where the piece was made and the date.

The first of these pieces (*Fig. 13*) is from a cemetery near Atfeh, about forty miles south of Cairo. This piece has already been published by M. Wiet in the *Répertoire*[6] and by

[1] E. W. Newberry, "Embroideries from Egypt," *Embroidery, Journ. Embroiderers' Guild,* VIII (1940), No. 1, 11–18.

[2] For a full discussion of technique, cf. N. A. Reath, *The Weaves of Hand-loom Fabrics* (Philadelphia, 1927). I am indebted to Miss Florence E. Day, of Washington, D.C., for her help in reading inscriptions and for making valuable suggestions about the pieces that are to follow.

[3] Measurements: .31 by .045. All measurements are in meters.

[4] Cf. G. Wiet, "Les Tissus et tapisseries de l'Égypte musulmane," *Revue de l'art ancien et moderne,* 1935, pp. 68–69. For a contemporary writer, cf. Nāṣir-i Khusraw (*ca.* 1045–52 A.D.), *Sefer Nameh,* trans. C. Schefer (Paris, 1881), p. 173: "The fine woolen stuffs that they use in Persia and call it *Misry* all come from Upper Egypt, because at Misr they do not weave woolens."

[5] For a similar piece cf. N. P. Britton, *A Study of Some Early Islamic Textiles in the Museum of Fine Arts, Boston* (Boston, 1938), p. 44, Fig. 22.

[6] *Répertoire chronologique d'épigraphie arabe,* ed. E. Combe, T. Sauvaget, et G. Wiet (Cairo, 1931–36), III, No. 818. Miss Day has also made suggestions in the reading of this inscription.

Mrs. Newberry.[7] It is interesting because it bears the name of the Abbasid caliph of Baghdad, Mu'taḍid,[8] and also of the governing Tulunid prince of Egypt, Harūn ibn Khumārawaih,[9] and mentions a workshop in Tinnīs[10] and the date 288 H. (901 A.D.). The inscription has small neat letters with tall uprights, embroidered with red silk in stem and double-running stitches. It reads as follows:

A. بسم الله والحمد لله نعمة من الله لعبد الله
ابى العبّاس الامام المعتضد بالله امير المؤمنين
ايّده الله مما امر اعزّه (sic) الله بعمله فى طراز
تنّيس على يدى عبيد الله بن سليمن سنة
ثمنة (sic) وثمنين ومائتين سلم (?)
B. هرون بن خمارويه مولى امير المؤمنين

A. In the name of God. Praise be to god. The favor of God to the servant of God, Abu'l-'Abbās, the Imam, al-Mu 'taḍid bi'llāh, Commander of the Faithful, may God strengthen him. This is what he ordered, may God glorify him, to be made in the workshop of Tinnīs, at the hands of 'Ubaid Allāh, son of Sulaiman, in the year 288. Peace.

B. Harūn, son of Khumārawaih, client of the Commander of the Faithful.

The second piece of this group (*Fig. 1*) bears the name of the Abbasid Caliph Muktafī,[11] a workshop in Egypt, and the date 294 H. (907 A.D.).[12] The letters are embroidered with brown silk in split stitch on an uncolored linen ground.[13] The embroidery, though on a small scale, is rather carelessly executed, and the piece is noteworthy chiefly because of its peculiar calligraphy, with short crossbars decorating the tall uprights. Pieces with this crossbar lettering apparently range over a period of about seventy-five years but seem to be confined to no particular workshop in Egypt.[14] The inscription reads:

[7] Newberry, *op. cit.*, Pl. 1, Fig. 1, and p. 17.

[8] Abu'l-'Abbās Ahmed Mu'tadid bi'llāh, sixteenth Abbasid caliph of Baghdad, reigned 279–89 H. (892–902 A.D.). Other ṭirāz from his reign are published as follows:

R. Guest, "Notice of Some Arabic Inscriptions on Textiles at the South Kensington Museum," *Journ. Royal Asiatic Soc.* 1906, p. 391 (dated 282 H.).

M. S. Dimand, "Dated Specimens of Muhammedan Art," *Metropolitan Mus. Studies,* 1 (1928–29), Pt. I, 109, Fig. 11 (dated 282 H.).

Hassan Mohammed al-Hawary, "Un Tissu abbasside de Perse," *Bull. Instit. d'Égypte,* XVI (1933–34), 63 (dated 283 H.).

F. E. Day, "Dated Ṭirāz in the Collection of the University of Michigan," *Ars Islamica,* IV (1937), 423–25, Nos. 3 and 4, Figs. 3 and 4 (dated 280 H. and 289 H.).

[9] Harūn ibn Khumārawaih was Tulunid prince of Egypt, 283–92 H. (896–904 A.D.). Mr. Guest cited 282 H as the year of the reconciliation of the Tulunid house with the Baghdad caliphate, from which it had been estranged since the time of Ibn Tulun.

[10] Tinnīs. cf. the contemporary writer Muḳaddasī (*ca.* 375 H.; trans. G. S. A. Ranking and R. F. Azoo [Calcutta, 1897–1910], p. 330): "Tinnīs, situated between the sea of ar-Rum and the Nile, is a small island in a lake, the whole of which has been built as one city. And what a city! It is Baghdad on a smaller scale, and a mountain of gold, and the emporium of east and west . . . Most of its inhabitants are Copts . . . The town manufactures coloured stuffs and garments." For other early pieces from Tinnīs, cf. E. Kühnel, "Tirāzstoffe der Abbassiden," *Islam,* XIV (1925), 87, Fig. 3 (Berlin Museums, Caliph Mu'tamid: 256–79 H.).

al-Hawary, *op. cit.*, p. 64 (Arab Museum, Cairo; Caliph Mu'tamid; dated 270 H.).

Exposition des tapisseries et tissus du Musée Arabe du Caire, du VIIe au XVIIe siècle, période musulmane (Paris, 1935), No. 27 (Arab Museum; Caliph Mu'tamid; dated 277 H.).

[11] Abu Muhammad Ali Muktafī bi'llāh, seventeenth Abbasid caliph, reigned 289–95 H. (902–8 A.D.). For other ṭirāz of Muktafī's reign, cf. *Exposition des tapisseries et tissus* . . . ., No. 83 (Arab Museum; dated 293 H.). Day, *op. cit.*, pp. 426–27, Nos. 5 and 6, Figs. 5 and 6 (Univ. Mich.; dated 289 H. and 293 H.).

[12] Guest has suggested this reading for the date. Miss Day has also helped in reading this inscription.

[13] Measurements, .36 by .165; inscription, .015 high.

[14] For pieces with similar calligraphy, cf. C. J. Lamm, "Dated or Datable Ṭirāz in Sweden," *Le Monde oriental,*

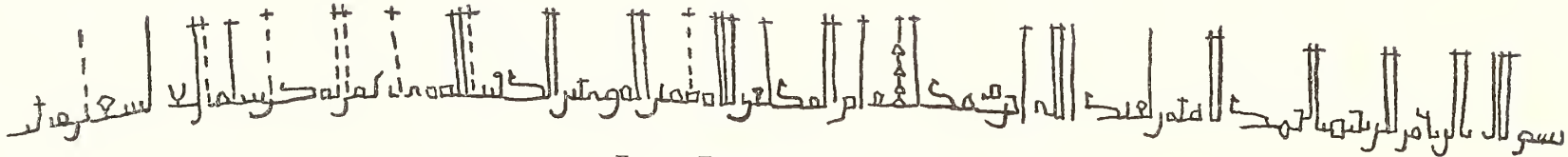


Fig. 1—Egypt, 294 h. (907 a.d.)

Fig. 2—Mesopotamia, 320 h. (932 a.d.)

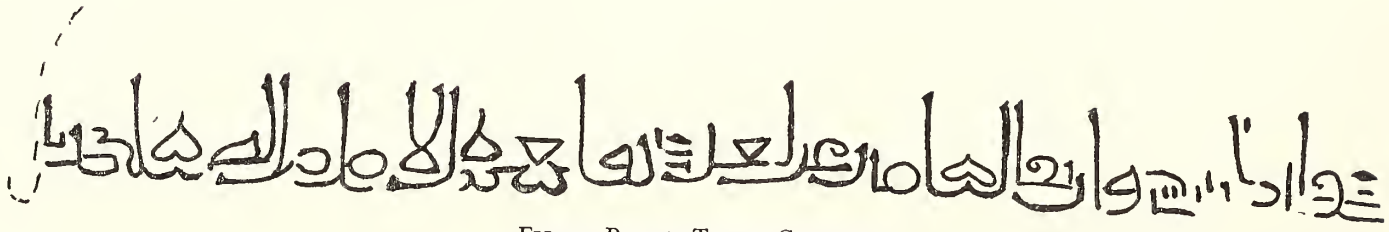


Fig. 3—Persia, Tenth Century

بسم الله الرحمن الرحيم الحمد لله يمن لعبد الله
ابى محمد الامام المكتفى بالله امير المؤمنين ايّده
الله مما عمل بمصر سنة اربع تسعين مئتين

In the name of God the compassionate the merciful. Praise be to god, success be to the servant of God, Abu Muhammad, the Imam, al-Muktafī bi 'llah, Commander of the Faithful, may God strengthen him. This is what was made in Egypt in the year 294.

The last two of this group of tenth-century inscriptions without other ornament (*Figs. 2* and *3*) represent a large series, with very attractive calligraphy and of good workmanship, which come from outside of Egypt, generally Mesopotamia.[15] Calligraphy of this type has slender uprights with spreading tips and a looped pattern underneath the letters. The ground is usually glazed and made of cotton or mulḥam (raw silk and cotton). The inscriptions (*Figs. 2* and *3*) both bear the name of the Abbasid Caliph al-Muḳtadir,[16] and Figure 2 is dated 320 H. Miss Day has observed that Figure 3 is particularly interesting since its calligraphy appears to be of the Persian type, and she has noted its similarity to an unpublished Persian ṭirāz in the Textile Museum of the District of Columbia in Washington, D.C.[17] Another textile in the Newberry collection belonging to the same type but not illustrated here is in poor condition and is difficult to read or photograph, but Guest has suggested that it also contains the name of the Caliph al-Muḳtadir and was "made in the special ṭirāz el-Khassa." All three pieces are embroidered in split stitch on a glazed ground, probably cotton, the inscription in Figure 2 in blue silk, and the two others in red silk.[18] The inscriptions of these pieces read[19] as follows:

Figure 2:

.... بركة من الله ونعمة وعزّ للخليفة عبد الله
جعفر بالسنة (sic) عشرين وثلثم[ئة]

. . . blessing from God and prosperity and glory to the caliph, the servant of God, Dja'far, in 320 (?).

Figure 3:

.... عزّ لعبد [ا]لله جعفر الامام المقتدر با[لله].....

. . . glory to the servant of God, Dja'far, the Imam, Muḳtadir bi 'llāh . . .

A related textile (*Figs. 4* and *14*)[20] is a fine fragment of decoration from the tenth or eleventh century. It is on a plain glazed ground of cotton or linen and is embroidered with exquisite workmanship in silk and gold.[21] The silk

XXXII (1938), 105, No. 1, Pl. 1 (Nat. Mus., Stockholm; made in Tinnīs, 258 H.).

Day, *op. cit.*, pp. 423–24, 427–28, Nos. 2, 3, and 7 (Univ. Mich.; No. 2, made in Shaṭā, 276 H.; No. 3, made in Tinnīs, 280 H.; No. 7, made in Egypt, 298 H.). Britton, *op. cit.*, pp. 47–48, Figs. 26 and 27 (Fig. 26, Caliph Muttaḳī [329–33 H.]; both undated).

[15] For a discussion of textiles from Mesopotamia, cf. R. Pfister, "Matériaux pour servir au classement des textiles égyptiens postérieurs à la conquête arabe," *Revue des arts asiatiques*, X (1936), 80–81; C. J. Lamm, *Cotton in Mediaeval Textiles of the Near East* (Paris, 1937).

[16] Abu 'l-Faḍl Dja'far Muḳtadir bi'llāh, eighteenth Abbasid caliph of Baghdad, reigned 295–320 H. (908–32 A.D.).

[17] Dated 308 or 318 H. Other Persian ṭirāz are published as follows:

Répertoire, II, No. 753; Caliph Mu'tamid, 277 H. Al-Hawary, *op. cit.*, Pl. 1, pp. 61, 69–70, and *Exposition des tapisseries et tissus. . . .*, No. 82; Caliph Mu'tamid, 278 H. *Répertoire*, III, No. 810; Caliph Mu'taḍid, 286 H. *Répertoire*, III, No. 865, and *Exposition des tapisseries et tissus. . . .*, No. 83; Caliph Muktafī, 293 H. Another unpublished Persian ṭirāz is in the collection of Motassian Bey in Cairo; Caliph Mu'taḍid, 283 H.

[18] Measurements, textile of Figure 2, .21 by .16; inscription, .02 high. Textile of Figure 3, .265 by .26; inscription, .02 high. The third (not illustrated) piece of the group, .38 by .165; inscription, .025 high. For other pieces of this type, cf. Britton, *op. cit.*, pp. 30–33, Figs. 4–9 (Figs 4 and 5, Caliph Muḳtadir; Fig 6, Caliph Rāḍī; all undated).

[19] Miss Day has helped with the reading of these pieces.

[20] This drawing is by Barbara Britton.

[21] The gold, evidently containing copper, is on membrane wound on brownish silk cord. The piece measures .115 by .04.

FIG. 4—MESOPOTAMIA, TENTH TO ELEVENTH CENTURY

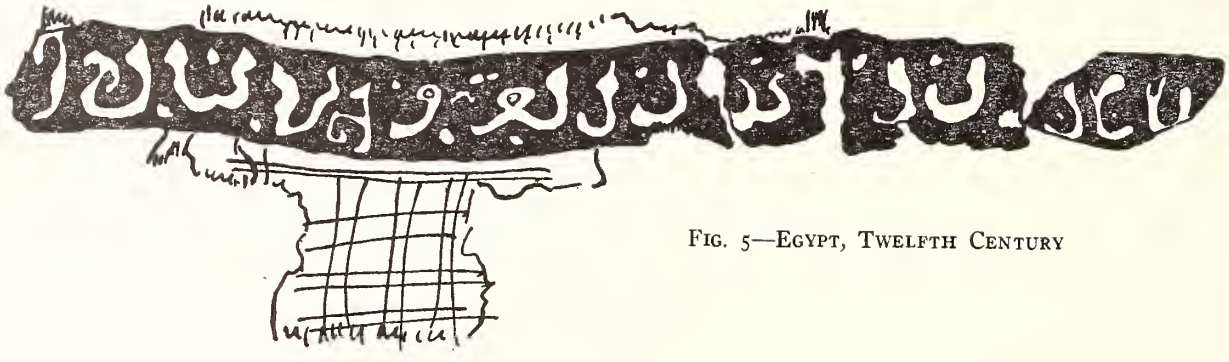


FIG. 5—EGYPT, TWELFTH CENTURY

FIG. 6—EGYPT, TWELFTH CENTURY

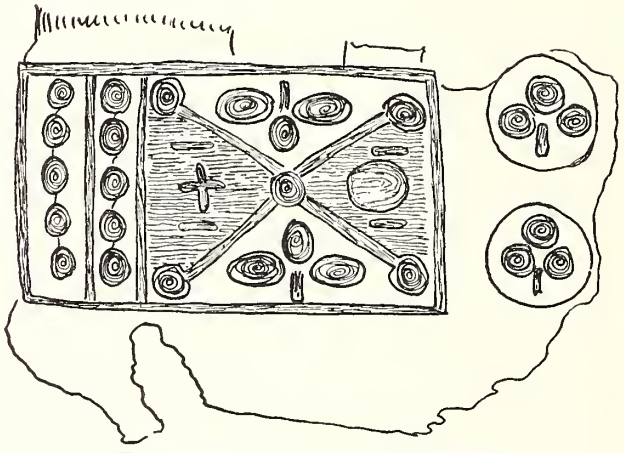


FIG. 7—EGYPT, TWELFTH CENTURY

is in two colors, both badly faded, worked with split-stitch, and the gold is couched. The design is of quatrefoil medallions enclosing heart-shaped leaves with gold floral patterns. Miss Day is of the opinion that this piece comes from Mesopotamia, which is extremely probable, since it has very strong bonds with other Mesopotamian textiles of the same period. In design it is strikingly similar to a small tapestry piece on a pink silk ground in the Museum of Fine Arts, Boston, which is thought to come from Baghdad.[22] Miss Day has further noted the resemblance of its drawing to that in another series of embroidered fragments, in the Boston Museum,[23] consisting of several small typically Mesopotamian animals the upper part of the legs of which forms a "bead and reel" motif almost identical with the enclosing bands of the Newberry fragment.

The next group of textiles considered is, in its main characteristics, typical of the twelfth century in Egypt, under the Fatimid caliphs.[24] The calligraphy, when it appears, is more debased than the severe inscriptions of the earlier pieces, or it is replaced by a band or lozenge of simulated calligraphy. In either case it is generally accompanied by other decoration, either abstract lines or curves, or debased floral, bird, and animal forms.

One large piece (*Fig. 16*) has already been published by Mrs. Newberry.[25] It is on a coarse linen cloth ground, with a fine bold design of birds in rondels and interlaced squares. It is embroidered with stem stitch in good fresh colors: red, blue, and yellow. The enclosing borders are on a couched linen field.[26] The execution is not particularly good, but the piece has great character, and its design and debased Neskhi calligraphy are quite typical of Egyptian ṭirāz of the second half of the twelfth century. Embroidered pieces of this period are not common, and the general technique of the piece is a forerunner of many lively but coarsely embroidered fragments of the ensuing Mameluke period. The inscription[27] reads:

بركة كاملة ونعمة شاملة واقبال دائم لصاحبه

Perfect blessing and universal grace and eternal good fortune to the owner.

Another unusual transitional piece dates from the late twelfth century (*Fig. 18*). It is on a linen cloth ground.[28] The enclosing borders are of pure pre-Islamic Coptic tradition, woven in wool tapestry in bright colors. The central band, on the contrary, embroidered in careful darning stitch with blue linen thread, could easily be taken for Mameluke. Leo A. Mayer has identified it as Fatimid work.

The textile shown in Figures 5 and 15 is intriguing also because it presents a puzzle. It is a normal debased Neskhi border, such as would be expected in the late twelfth century in Egypt. Its inscription bears a pious formula of the usual type. The piece is embroidered, principally with an irregular stem stitch, in yellow, red, and blue silks.[29] Its ground, however, is very unusual. It is of undyed linen cloth with vertical and horizontal stripes of brown silk. The only piece that I remember seeing with an identical ground is a fragment of entirely different character in the Boston Museum, which

[22] Britton, *op. cit.*, p. 35, Fig. 10.

[23] *Ibid.*, p. 35, Fig. 12.

[24] The finest period of decoration in Fatimid Egypt, during the eleventh century, mainly under the Caliph el Mustanṣir, is not represented in this article. During this period, the contemporary Persian writer, Nāṣir-i Khusraw (*op. cit.*, p. 151), who visited Egypt about 1045 A.D., spoke of various fine types of Egyptian textiles; particularly būḳalamūn (from the Arabic word for chameleon), which because of its rich decoration, delicate colors, and diaphanous texture he compared to the faiënce of the time.

[25] Newberry, *op. cit.*, p. 17, Pl. 2, Fig. 1.

[26] Measurements, .615 by .21. The inscription is .015 high.

[27] Miss Day has helped with this inscription.

[28] Measurements, .27 by .13.

[29] Measurements, .16 by .04.

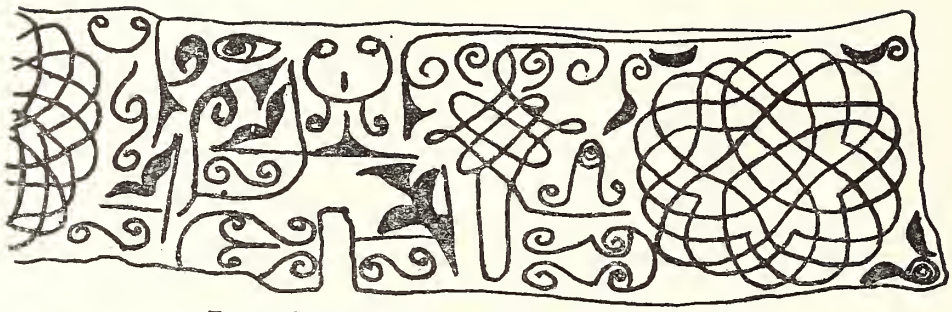


FIG. 8—EGYPT, TWELFTH TO THIRTEENTH CENTURY

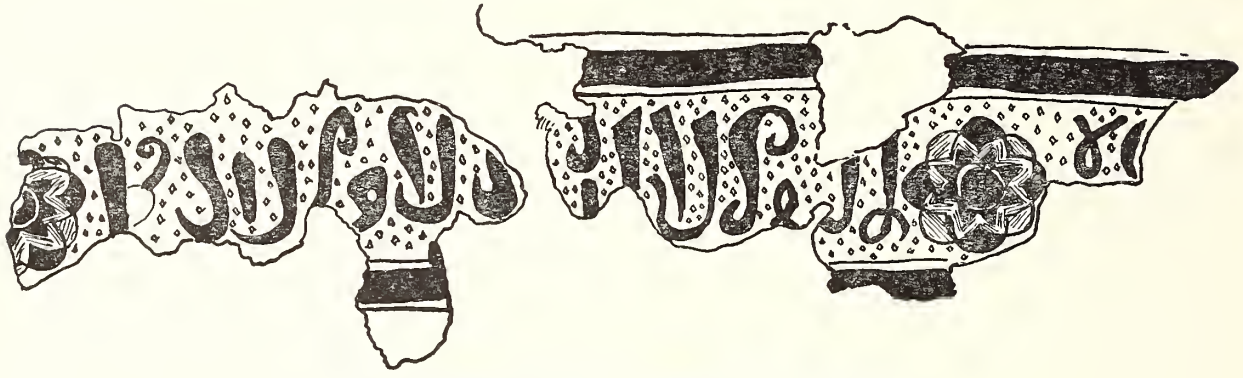
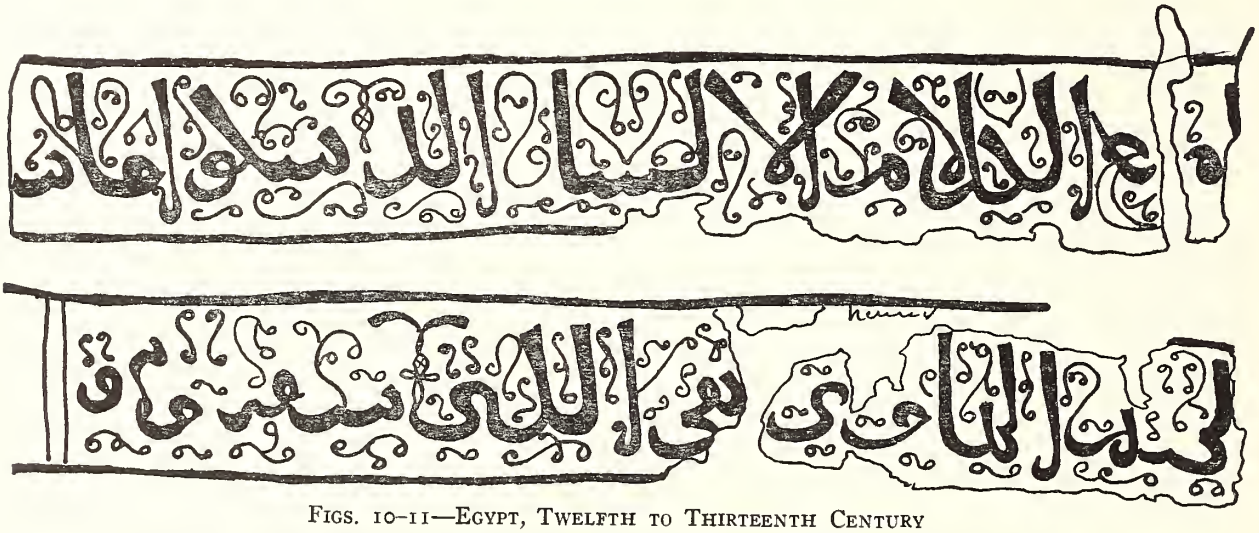
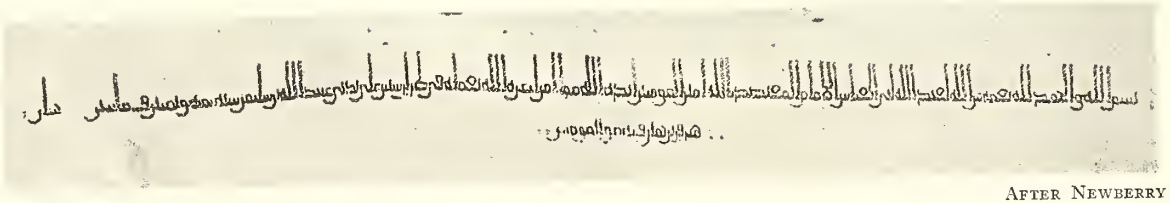


FIG. 9—EGYPT, TWELFTH TO THIRTEENTH CENTURY



FIGS. 10–11—EGYPT, TWELFTH TO THIRTEENTH CENTURY

Fig. 12—Upper Egypt, Ninth to Tenth Century



After Newberry

Fig. 13—Egypt (Tinnīs), 288 h. (901 a.d.)

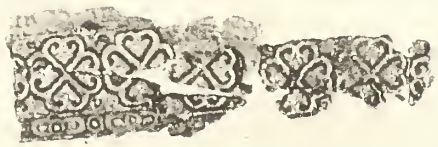


Fig. 14—Mesopotamia, Tenth to Eleventh Century

Fig. 15—Egypt, Twelfth Century

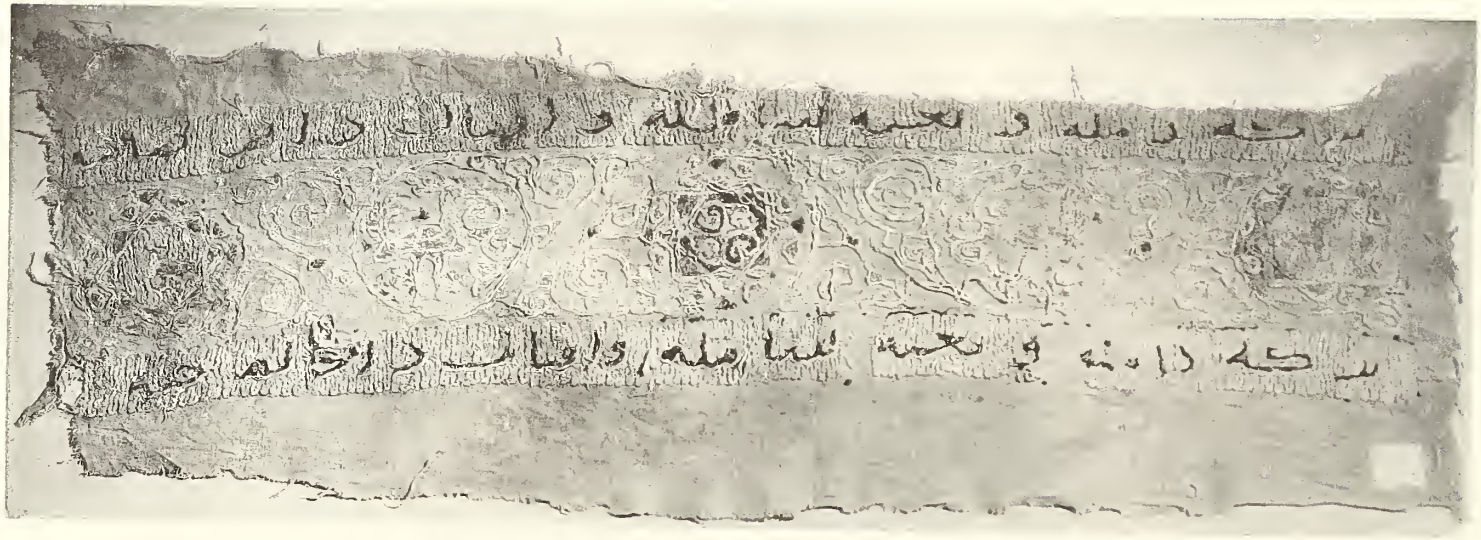


Fig. 16—Egypt, Twelfth Century

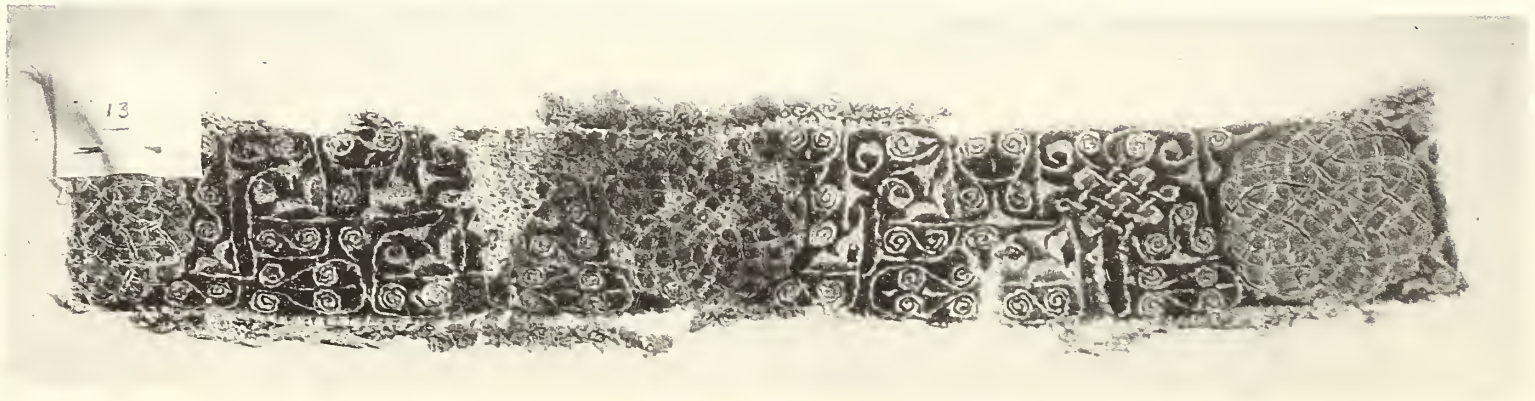


Fig. 17—Egypt, Twelfth to Thirteenth Century

Fig. 18—Egypt, Twelfth Century

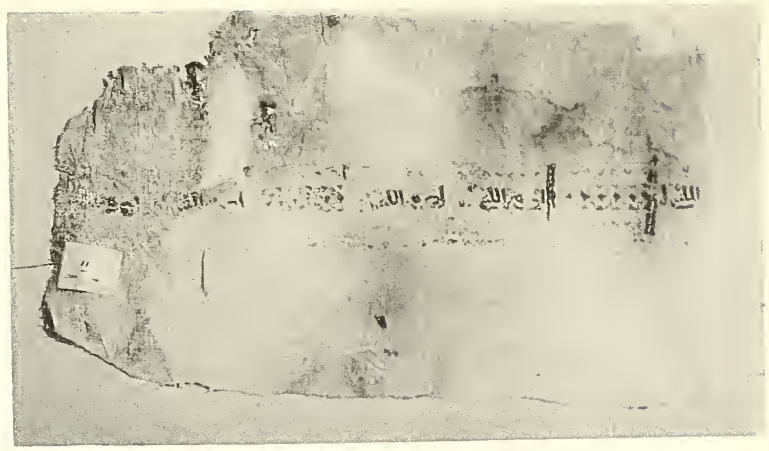


Fig. 19—Egypt, Twelfth Century

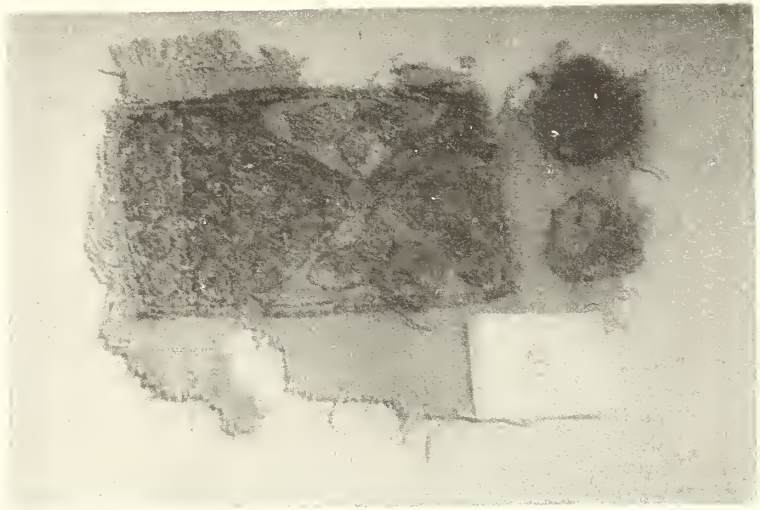


Fig. 20—Egypt, Twelfth Century

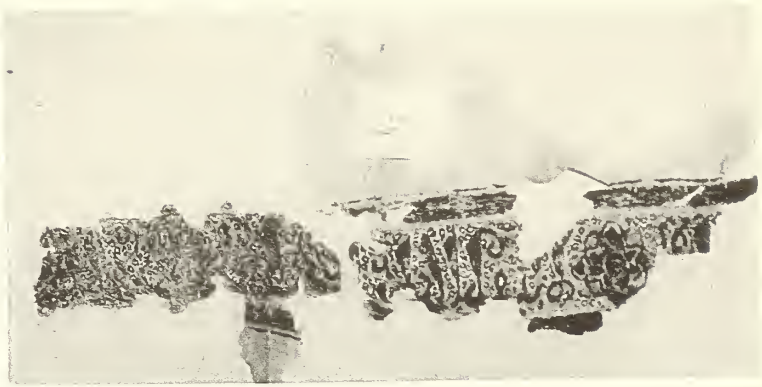
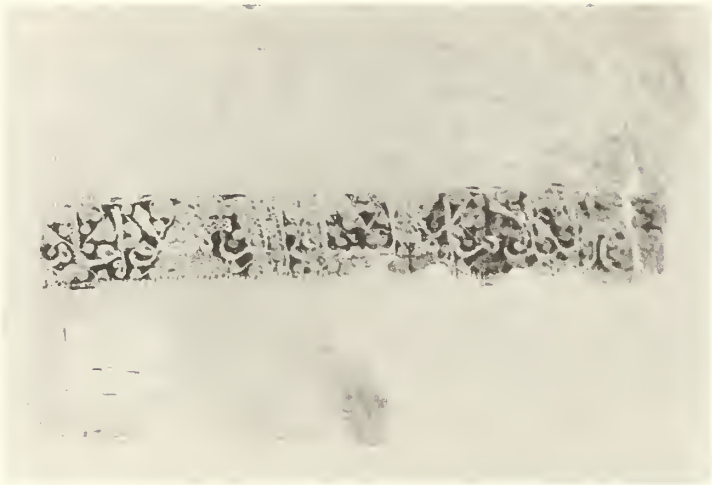


Fig. 21—Egypt, Twelfth to Thirteenth Century



FIGS. 22–23—EGYPT. TWELFTH TO THIRTEENTH CENTURY

FIG. 24—EGYPT OR MESOPOTAMIA, TWELFTH CENTURY

FIG. 25—EGYPT OR YEMEN, TWELFTH CENTURY

has tentatively been placed to Egypt or Mesopotamia in the twelfth or thirteenth century.[30] At first glance these two pieces have no relation to each other beyond their identical ground. The Boston fragment has a very formal and well-drawn Neskhi inscription, its workmanship is more finished, and its general appearance is richer, since it is couched with gold. But on closer examination, one can draw other slight analogies between the two pieces. Both inscriptions are worked on a deep blue embroidered silk field, which is not common, and the calligraphy of both is decorated with large round dots, resembling an exaggerated pointing of the inscription. The inscription of the Newberry piece[31] reads:

العزّ والاقبال

Glory and prosperity.

A rather good and careful example of twelfth-century decoration (*Figs. 6* and *19*) has rectangular cartouches containing a short pious formula in formal Neskhi, repeated once and then alternated with a cartouche of abstract design suggesting the calligraphy. Like the textile of Figure 16, it is unusual because it is of embroidery rather than tapestry. Its neat form and arrangement already suggest Mameluke work of a good type. It is worked in split stitch with green and red silk, on a plain linen ground.[32] The inscription reads:

نصر من الله

Victory from God.

Another textile (*Figs. 7* and *20*) demonstrates a pleasant twelfth-century corruption from Egypt of the earlier Mesopotamian type, as seen in Figures 4 and 14. Its double row of Sasanian pearl motifs should be noted. The main design is a rectangular cartouche containing turquoise and yellow triangles and trifoil motifs in gold.[33] It is worked with silk in split and stem stitches and couched gold on a coarse glazed linen ground. The triangular motifs suggest traditional pieces of the Ayyubid period (567–648 H. [1171–1250 A.D.]).

With the reign of the Ayyubid sultans in Egypt, came a revival of orthodox restrictions and a general renaissance of the more severe rules of the arts, under the famous Ayyubid founder, Saladin, who had been vizier to the last Fatimid caliph. The next three pieces are distinguished examples of the formal Neskhi ṭirāz and linear decoration of this period.

The textile shown in Figures 8 and 17 was published by Mrs. Newberry.[34] It contains no inscription, but its neat cartouches of arabesques suggesting calligraphy are similar to the arrangement in Figures 6 and 19. These cartouches, worked with blue silks in stem stitch, are alternated with red rosettes.[35]

Rosettes again appear in another embroidery (*Figs. 9* and *21*); this time alternated with bands of formal Neskhi inscription, which has not been deciphered. The inscription is in blue and yellow silks, and the rosettes in bright blue, green, red, and yellow, all worked with stem stitch and couching. The vivid use of primary colors strongly suggests the later Spanish-Arabic woven silks.[36]

The textile illustrated in Figures 10, 11, 22, and 23 was published by Mrs. Newberry.[37] The boldness of its inscription and the elaboration of the fine scrolls encrusting it are reminiscent of

[30] Britton, *op. cit.*, p. 71, Fig. 90.

[31] Miss Day has helped with this inscription.

[32] Measurements, .27 by .16.

[33] The gold is on membrane wrapped on cream silk thread. Measurements, .1 by .07.

[34] Newberry, *op. cit.*, p. 18, Pl. 9, No. 4.

[35] Measurements, .235 by .045.

[36] The piece is in two parts; measurements, .115 by .075 and .075 by .05. For a similar use of rosettes, cf. *Exposition des tapisseries et tissus. . . .*, Pl. 14 (Arab Museum, Cairo, twelfth century A.D.).

[37] Newberry, *op. cit.*, p. 18, Pl. 2, Fig. 2.

typical eleventh-century Fatimid ṭirāz,[38] with the exception that the inscriptions are now in formal Neskhi instead of Kufic, and that the earlier pieces were of tapestry technique.[39] This piece is embroidered in silk on a glazed linen ground, in split stitch and couching. Cream letters with touches of red are on a deep blue field. The inscription has not been deciphered.[40]

The last two pieces selected are painted in gold outlined with black, probably on a glazed cotton ground. It is well known that cottons painted with gold on an ikat ground originated in the Yemen.[41] The textiles in Figures 24 and 25, however, are on a plain glazed ground, and they are like some in the Arab Museum, Cairo,[42] which are ascribed to Egypt in the first half of the twelfth century, when cotton was beginning to be less rare.

Miss Day has pointed out, however, that the textile in Figure 24 may well be Mesopotamian. It has a band of very indistinct Kufic writing, undeciphered. Above this is a narrow band of lozenges and "pearls" surmounted by two affronted birds.[43]

The textile in Figure 25 has a floriated Kufic inscription, suggesting the ornamentation of the Yemenite calligraphy; the piece may, indeed, be Yemenite.[44] The inscription reads:

بسم [الله] الرحمن الرحيم .....

In the name of God the compassionate the merciful. . . .

[38] Cf. Britton, *op. cit.*, pp. 52–53, 58–61, Figs. 50–59.

[39] Miss Day is of the opinion that the style of writing of this piece is Mameluke.

[40] Mrs. Newberry said that the inscription reads: "Love it is that keeps the eloquent man from speech." Measurements, (*a*) .17 by .11; (*b*) .19 by .13.

[41] Cf. Britton, *op. cit.*, pp. 72–75.

[42] Cf. Zaky Mohamed Hassan, *Kunūz al-Fatimīyīn* (Cairo, 1937), Fig. 17. *Exposition des tapisseries et tissus. . . .*, Pl. 15. G. Wiet, "Tissus et tapisseries du Musée Arabe du Caire," *Syria*, XVI (1935), 288–89, Pl. 49b.

[43] Measurements, .13 by .13.

[44] Measurements, .26 by .1. The inscription is .05 high.

It will be observed that a number of the later pieces which are shown have some features of the Mameluke period. Some of them, for various reasons, might justly be attributed to a period later than the middle of the thirteenth century, or to a province in the Near East other than the particular one we have suggested. They are included here since they all retain predominantly Fatimid characteristics in their scale of drawing, their background and type of workmanship, and the simple horizontal banding of their decoration.[45]

NANCY PENCE BRITTON

TWO ROCK-CRYSTAL CARVINGS OF THE FATIMID PERIOD

The dish illustrated in Figure 1 is one of several vessels exhibited in the Treasury of San Marco at Venice which hitherto appear to have escaped attention. Failure to discover any reference to it in the inventories of the Treasury drawn up by Pasini[1] and Molinier[2] or in the general survey of Near Eastern carved crystals more recently undertaken by C. J. Lamm,[3] suggests that, even if this attractive example of Fatimid art has already been described elsewhere, there may still be some to whom an as yet unpublished photograph of it will be acceptable.

A shapely if somewhat robust piece of work, carved from a block of dusky yellowish crystal, the dish measures 25 cm. in diameter, 5 cm. in height, and 13 cm. across the shallow circular base. It is enriched with a band of foliated ornament, cut in low relief upon the undersurface of the rim, but clearly visible from above through

[45] The photographs accompanying this article were made under trying conditions in wartime England.

[1] A. Pasini, *Il Tesoro di San Marco in Venezia* (Venezia, 1887).

[2] E. Molinier, *Le Trésor de la Basilique de Saint Marc à Venise* (Venise, 1888).

[3] C. J. Lamm, *Mittelalterliche Gläser und Steinschnittarbeiten aus dem Nahen Osten* (Berlin, 1929–30).

Photograph O. Böhm

Fig. 1—Rock-crystal Dish. Fatimid. Venice, Treasury of San Marco

Photograph E. Alinari

Fig. 2—"La Grotta della Vergine," Rock-crystal Niche. Coptic Work of the Fatimid Period. Venice, Treasury of San Marco

the transparent substance. The ornament consists of a twining stem, bearing in the interspaces triangular leaf forms decorated with loosely coiled spiral terminals,[4] a type of foliage closely allied to the so-called "split-palmette" device of which various more or less similar developments frequently occur in the decoration of Fatimid crystals. The ornament is used with a restraint uncommon in contemporary crystals, which are generally much more lavishly enriched, with few, if any, plain surfaces.

So far as the writer is aware, the dish is the only Fatimid crystal vessel made of colored material as yet described. Neither the date when it was acquired by the Treasury, nor the source from which it was obtained are recorded.[5] It probably dates from the first half of the eleventh century.

In medieval Europe the carved crystals produced during the Fatimid period were always highly esteemed as precious possessions. A large proportion of those now in existence are still preserved in churches, where they were originally deposited as gifts dedicated to religious use by pious donors in medieval times. Converted to Christian service as reliquaries or to other such purposes, they are often enriched with mounts of gold or silver gilt, fashioned in Western workshops.

The Treasury of San Marco contains many Fatimid crystals furnished with European mounts and also a few curiously complex objects, in which damaged crystals and dismembered parts of metal ornaments made at different times and places are assembled in promiscuous incongruity. One such piece (*Fig. 2*) is especially interesting, for it incorporates an apparently unidentified Coptic crystal of the eleventh century. The crystal, the principal feature in the somewhat fantastic structure, is shaped to represent a niche; but as it is now turned upside down, the original intention is at first sight difficult to realize. The curving internal wall of the niche is decorated with a row of pilasters, with Ionic capitals and plain bases, cut in low relief. Tall crosses, with foliated heads, fill the spaces between the pilasters. The panels on either side of the external face are enriched with a formal design, which recalls similar ornament on contemporary Fatimid crystals.[6] The base—as now arranged, the upper part—is so defaced by breakage and unskillful recarving that it is impossible to recover an idea of the design in its perfect state. The sole undamaged detail, a beautifully carved claw, suggests an elaborate composition of birds and foliage.

The Byzantine votive crown, upon which the crystal now stands, is enriched with enameled medallions of eleventh- or twelfth-century date.[7] The bronze peacocks perched on the upper edge of the crown so closely resemble the larger eleventh-century Fatimid peacock at Paris, in the Louvre,[8] that they also are possibly Fatimid work of the same date. The figure of the Virgin, set in the inverted semidome of the niche, is Venetian work of the thirteenth century.[9] As the most recent in date of the separate parts assembled in the reconstruction, it may be a clue to the date

[4] Devices carved on the hindquarters of a crystal lion in the British Museum exactly resemble single units of the design on the dish. See M. H. Longhurst, "Some Crystals of the Fatimid Period," *Burlington Mag.*, XLVIII (1926), 150, Pl. II, h.

[5] No medieval inventories of the Treasury are now in existence. The modern official inventory of the Procuratoria di San Marco contains only a brief description of the dish, which is No. 102. I am indebted to Professor G. B. Piccoli for kindly examining the inventory and sending me this information.

[6] Lamm (*op. cit.*, I, 214) calls this piece "Byzantinisch, XI.-XII. Jahrhundert." Vol. II, Pl. 76, 1, shows only a small sketch of this object.

[7] O. M. Dalton, *Byzantine Art and Archaeology* (Oxford, 1911), p. 514. Here, it may be noted, the circular medallions are incorrectly described as "rectangular panels."

[8] G. Migeon, *Manuel d'art musulman* (2d ed.; Paris, 1927), I, Fig. 188, p. 380.

[9] Molinier, *op. cit.*, p. 95.

when this was effected. It is not easy to determine what purpose the reconstruction was intended to serve. The rings affixed to the lower rim of the crown appear to have been arranged to carry pendant ornaments, which would imply that the object was designed for suspension in midair, a supposition confirmed by the loops attached to the backs of the peacocks, which would afford suitable fixings for suspensory chains. In its present state, the entire structure measures nearly eight inches in height.

As Coptic crystals of the Fatimid period are rare—perhaps none other has been recorded—this example claims closer attention than the writer was able to devote to it. Gathering storm clouds on the political horizon made hasty departure from Venice imperative.

A. H. Christie

A HITHERTO UNKNOWN DAMASCENE ARTIST

Among the numerous illuminated manuscripts of the *Maḳāmāt* of al-Ḥarīrī there is one in the British Museum (Or. 9718) which has not received the attention it deserves. It contains several miniatures which are vivid illustrations of everyday life in the Mameluke realm and some that are of special importance for the history of medieval Saracenic costume. Unfortunately, these miniatures are not very photogenic, some of them having been repaired with a gauze-like material, but luckily they have been neither restored nor overpainted except for the faces, which are very often blotted out. Of particular value is a miniature at the beginning of the fifteenth maḳāma (fol. 53^{r}), since it reveals the name of the artist and his country of origin. It shows Abū Zaid in Ḥārith b. Hammām's house (*Fig. 1*). The trefoil arch under which they are sitting, the conventional representation of a private house in this and many other contemporary manuscripts, is crowned with a ṭirāz, the inscription of which reads:

صنعه غازى ابن عبد الرحمن الدمشقى

Work of Ghāzī son of 'Abd ar-Raḥmān, the Damascene.

The date given in the colophon of the volume (corresponding to 1271 A.D.) is a modern addition and has nothing to do with either text or illumination. When the manuscript is again available for study I hope to be able to respond to the kind invitation of the editor of *Ars Islamica* and give a full description of the miniatures of this codex.

L. A. Mayer

Fig. 1—London, British Museum, Or. 9718, Fol. 53^{R}: Miniature with Artist's Signature

BOOK REVIEWS

EDITORIAL NOTE

When the Editor of *Ars Islamica* and several members of its consultative committee had decided on the authors and the scheme of the reviews of the *Survey of Persian Art*, published in Volume VIII of this journal, it was anticipated and even hoped that various scholars whose work had been analyzed would wish to answer in a later issue. The Editor has, therefore, welcomed the proposals made by Mr. Arthur Upham Pope and Mr. Eric Schroeder to send in such replies. He regrets that the war has interfered with this discussion just as it has prevented him from obtaining all of the reviews originally planned to cover every Islamic subject dealt with in the *Survey*. It was not possible to get every point of view on the controversial issues. To offset this, the Editor has accepted Mr. Pope's proposal to write a general answer, not only to the reviews of his own contributions to the *Survey*, but also to those of his various collaborators. His answer on behalf of Mr. R. L. Hobson and Mr. Robert Byron will be final, for these men have since died. The columns of this journal are still open to those who have been unable to send in their answers because of the war.

The Editor had intended to bring out final statements of the original reviewers of the *Survey* in conjunction with the replies to their essays. This was possible in only one instance, for several of the original reviewers could not be reached or are now fully occupied in the service of their country. If these scholars should wish to make statements to conclude the discussion their answers will be published in a later issue of *Ars Islamica*.

As has already been stated in the "Editorial" at the beginning of Volume VIII, the Editor leaves every contributor a free hand in the methods and presentation of facts in this discussion. Therefore, the publication of the various statements does not necessarily mean that the Editor agrees with the methods or facts presented. It seemed to be necessary that in a time when one of the great issues of the world is the freedom of speech and thought this journal too should provide complete freedom of expression within the range of a scholarly publication.

THE *Survey of Persian Art* AND ITS CRITICS

Ars Islamica has devoted to reviews of chapters in the *Survey of Persian Art* two numbers combined, surpassing in volume, as far as the present writer knows, any review ever accorded any publication, a compliment which the editors, authors, and publishers of the *Survey* appreciate. These reviews, however, give an incomplete idea of the *Survey*, for they consider only twenty-one chapters out of one hundred and fifteen, not sixty-nine, as Ettinghausen says, apparently counting sections, which sometimes consist of eight to twelve chapters written by as many as eight different scholars. Even of the text that concerns the Islamic period these reviews deal with only a scant 40 per cent by volume, and this counts as a "review" in some instances a sentence or two, which is all that Godard accords to each of several important chapters; of eleven of the sixteen chapters in the Islamic architecture section he has not a word to say. On the other hand Erdmann's exceptionally able account of the history of carpets takes up nearly ninety-four pages with no words wasted. Moreover, there is some inconsistency in the choice of subjects, for although pre-Islamic textiles and Sasanian metal are reviewed, the other important pre-Islamic material is ignored. Thus, no coherent estimate of the *Survey* emerges, which, as the editor of *Ars Islamica* pointed out in his

"Editorial," has to be charged to the hazards of wartime editing.

Ettinghausen says that the purpose of the reviews is not only to provide new information, which all of the reviewers except Kühnel have done, but also to test the claims of the *Survey* and to show, even to nonspecialists, how much reliance can be placed on the various chapters. But could any nonspecialist even follow, let alone appraise, the learned article of Miss Abbott, for example, or estimate the dogmatic review of Godard, with its numerous unsupported assertions?

And now the testers themselves must be tested, and we must in turn try to gauge how "authoritative and dependable" their criticisms and contributions really are. This is a task which, like reviewing the *Survey* itself, exceeds the competence of any one person. Some of the matters considered are so highly specialized that only a few living scholars could discuss them adequately. But this does not mean that such articles need be taken at their face value. There is always the test of inherent reasonableness, and the dependability of a review is qualified by the self-revealing spirit in which it is written: whether querulous and faultfinding, primarily interested in scoring the maximum number of objections, or obviously animated by emotional bias fatal to objective judgment; or whether the critic is really of open mind and good will, taking a responsible and constructive attitude.

Ettinghausen, in speaking of the physical properties of the *Survey,* says, counting by figure numbers, that there are one thousand text illustrations. Inasmuch as some of the reviewers in *Ars Islamica* are insistent on quantitative accuracy, it might be fair to point out that instead of one thousand there are 1,966 text illustrations. Of course, in many cases several drawings are grouped on single plates, but they are separate drawings, sometimes done years apart and by different artists as distant one from another as are Oxford and Isfahan, and thus deserve to be counted as separate illustrations. In the cost accounting they were painfully separate.

Ettinghausen's doubly qualified statement that the *Survey "might perhaps* be said to surpass physically anything else that has yet been achieved. . ." (italics mine) is a somewhat dubious compliment for a book that aimed primarily at intellectual and artistic achievement. It is on the latter that the claims of the *Survey* must rest, and those who acknowledge only some of its secondary attainments might be challenged to cite any single work in the history of art that presents for the first time so many monuments, objects, documents, interpretations; that writes the history of a whole group of important arts for the first time—an undertaking that inevitably must have its shortcomings, but must be measured by the magnitude of the task and its pioneer character as well as by its enduring results.

The editors also wish that Ettinghausen had emphasized their co-ordination of the contributions into a reasonably consistent and organic whole, even achieving a unity of style—a most difficult task with nearly seventy contributors of different intellectual habits and methods of exposition. Some scholars feel that this constitutes a unique accomplishment of the *Survey.*

None of the reviewers has taken account of other chapters in the *Survey,* which, because the whole work is so closely organized, often have an important bearing on sections under consideration; and none seems to be aware of the fact, though it has been repeatedly set forth, that the *Survey* is part of a more inclusive scheme, not merely that it is only the first half of a publication which, if it can be completed, will set every one of its components in a far better perspective, but that the organization of international exhibitions, international congresses, international associations, the opening up of Persia to archaeological opportunity, and the organization of architectural and ceramic surveys, were all aspects of a common program,

and the *Survey* must in part be judged by its relation to these ancillary enterprises. The simultaneous carrying out of such a program in a period of desperate world depression and in the face of an impending world war created special difficulties of which the reviewers in *Ars Islamica* have not taken account.

To find any one person who could review the whole work was, as Ettinghausen points out, impossible. That Schapiro's criticism of the interpretative methods of the *Survey*[1] furnishes an adequate appraisal of them and can be taken as a starting point, as Ettinghausen seems to imply, is questionable. M. Schapiro's review is in many respects conventional, often irrelevant, and sometimes downright erroneous, and at the same time he missed some of the most significant features of the *Survey* program. His review will be discussed in due course elsewhere.

Ettinghausen's plan to have a first-class expert review every important section was admirable, and that it was frustrated by war conditions is unfortunate. But his statement that the articles which are published are all by reviewers who "write . . . . with the authority of their recognized experience and with wide knowledge of their fields" (p. 2) is not wholly justified. Miss Day's review is her first publication in the field of Persian ceramics, and Kühnel, though well known as a scholar and a curator of Islamic arts in the Berlin Museum, could hardly claim authority on textiles. He has published little in the field and contributed almost nothing. That there is no review of the important section on the art of the book is regrettable. It is very much to be hoped that a review of this major subject will be provided in a future issue of *Ars Islamica*.

Islamic Architecture

Those who expected a sound and illuminating review of the Islamic architecture by Godard, an expectation justified by his exceptional opportunities, will be disappointed, and it is a question whether a review couched in the terms which he has permitted himself in his more agitated moments ought even to be answered. Godard's wholesale and drastic condemnation of the text is the more curious because the greater part of the galley proof was put into his hands in October, 1937, and he at that time offered very few criticisms, but returned it with substantial commendations. This is the same text, save for many improvements, that he now derides.

To Godard's more extravagant denunciations, particularly his jaunty condemnation of six colleagues and their immense labors in the field, in documentary research and in the formulation of the results, the text itself is the answer. That there are errors in it goes without saying, and that there would be was foreseen by the principal authors, who stated that they were "more aware, than most, of the difficulties of the task which they have undertaken with becoming trepidation . . . . are fully aware of the necessarily provisional character of the account here offered" (p. 897, note 2). The extent of material covered is vast in time, space, variety, and complexity; most of it had never before been discussed, and no prior attempt had been made to organize it in anything like a historical interpretation. Godard's review gives a false impression, first in not recognizing these conditions; second, in not distinguishing between real errors and points on which he merely differs in opinion, perhaps himself committing the error; and third, in not estimating the proportion between the errors he cites and the total volume of information and interpretations offered, an estimate which would show only a small percentage of actual mistakes, probably no greater than could be found in any history that covered a comparable range even of the well-known aspects of architecture.

Godard's review contains a number of dubi-

[1] *Art. Bull.*, March, 1941.

ous statements. He dismisses as having no real relation to the subject the discussion of materials, aesthetic characteristics, geographical divisions, and historical periods, a reflection of the jejune fallacy that architecture, which he actually defines as "l'art de construire" (p. 3), is only engineering and its description merely structural analyses. This veritable devastation of architectural history would grievously impair future work were it taken seriously, as is hardly likely; the fallacy has been exposed too often. That architecture is one of the fine arts and to be treated as such is no longer arguable.

Godard overlooked some real errors which should have been pointed out. Thus, by a typographical accident, the Imāmzāde of Buzūn (Pl. 311B) is dated 1534 in the legend, instead of 1134 (A.D.) Godard missed the satisfaction of announcing a discrepancy of four hundred years, although he has been at pains to correct other dates by even less than one year, errors regrettable but not affecting the historical significance of the monuments in question.

Some criticisms are trivial, although sometimes literally true; and several are little more than quibbles. For instance, he is very scornful of the late Robert Byron for having spoken of the foundation of the Mausoleum of Gawhar Shād as rising to the height of a man's waist, since, as Godard protests, foundations are underground. The right term is foundation course and the editors should have caught the slip; but was it worth mentioning? The rest of Byron's sentence Godard has not even understood, for Byron has remarked that because of the projection of the base "the building is in firm communication with the ground." Godard thinks that he has contradicted this observation by saying that the stone is a decorative revetment, not structural, and therefore has nothing to do with the stability of the building. But Byron was reporting an aesthetic not an engineering fact; the concealed bricks that actually support the weight play no part in the façade design. Other remarks of Godard on the mosque of Gawhar Shād are interesting and valuable.

Many of Godard's comments are correct and informing, others are debatable, like his discussion of the *"voûte armée,"* where his conclusions are refuted by some of the illustrations which he himself generously calls a "treasure of authentic documents" (p. 7).

Godard speaks in a preemptory tone, often without a word of evidence: for example, of the stucco on the soffit of the mihrab arch in the Shiraz Masdjid-i-Djāmi' (Pl. 259A, p. 7), he says: "Cet ornement est d'au moins deux siècles postérieur à la date indiquée." He has paid no attention to the discussion of early Islamic ornament (p. 2707), in the evolution of which this takes a clear place. Since this dating has already been accepted by almost every scholar in the field and has been especially commended by such an astute and conservative scholar as Creswell,[1a] Godard's affirmation without reasoned support is of slight interest.

Although Godard has had the immense advantage of being in the country almost continuously since his appointment in 1928 and has had at his disposal funds, facilities, and important aid from government departments, most of the previously unpublished monuments discussed in the *Survey* were discovered by the present writer and Eric Schroeder, who frequently antedated Godard's entry into them even by years. Those who won the battle to open the Persian mosques are entitled to at least fair play from those who have subsequently profited by their accomplishment. It was the authors of chapters that Godard so scorns (the present writer and Schroeder) who broke down the governmental and popular prejudice against the entry of infidels into occupied mosques, without which a history of Persian architecture was impossible.

Godard, like other reviewers of *Survey* chap-

[1a] *Early Muslim Architecture* (Oxford, 1940), II, 364.

ters in this number of *Ars Islamica,* overlooks the fact that the work reviewed is, like much of his own, largely pioneer work; that while records of early travelers like Flandin and Coste and special monographs like those of Sarre remain invaluable, no history of this vast and complicated art existed until the writers in the *Survey* undertook to supply it, and the history of Persian architecture contained in the *Survey* represents an advance over all previous work such as is scarcely to be found elsewhere in the history of architecture.

Ceramic Arts

Miss Florence Day has written a detailed review of Chapter 45, "Ceramic Art in Islamic Times," correcting painstakingly a number of misprints, misspellings, misreadings of inscriptions, and a few mechanical inaccuracies that the editors and proofreaders overlooked—which she generously says are relatively few considering the size of the work—and also calling attention to a number of other mistakes, inseparable from a pioneer undertaking, which can be gratefully acknowledged. The article shows a considerable knowledge of ceramic techniques, extensive acquaintance with the literature, apparently an easy command of Arabic, and immense industry; but had she confined her comments principally within this range, her review would have been much more valuable.

For while her work at a number of points does mark an advance in our knowledge of Persian ceramics and constitutes a useful supplement to the *Survey,* it suffers from a somewhat narrow outlook and limited experience, and often reveals a lack of that open-minded judicial temper which is the first requirement for a reviewer. Miss Day confuses the roles of judge and prosecutor, rather too frequently falling into a monotonous accusatory tone. Moreover, she is obviously bent on scoring the largest possible number of objections, so that she has searched busily for trifles—a preoccupation that has prevented her from realizing fundamental merits, has led to misconstructions of the text, and some flat misstatements and quite unreasonable demands. She has also occasionally fallen into dogmatisms and unsupported speculations, of which she disapproves on principle, and has issued some complacent verdicts in fields where her qualifications are insufficient.

To consider first the general approach, methods, and presuppositions, since these are fundamental: Miss Day seems to have misunderstood the character and purpose of the *Survey* as a whole and of the ceramics chapter in particular, and she has made some wrong assumptions about the nature of art and the purpose of art history. The immense difficulties and complications in the composition and printing of a book of this size are not recognized. For example, the editors and the printer calculated that in terms of any comparable publication that had been done, the completion of such a work would require more than thirty years. But the *Survey* was only feasible if it could be finished in not more than seven or eight years after the revision of the program in 1931. The short time available involved extreme severity of effort. International exhibitions and congresses, expeditions to Persia—all related to the *Survey*—made it impossible to attain the perfection at which the editors aimed; and even so, it would have been only fair to ask, as Miss Day does not: "Was there ever a first history of any branch of the ceramic art that achieved more, relative to what was and could be known at the time?"

Much more serious is the misunderstanding concerning the audience to which the *Survey* is addressed. Miss Day says: "One senses a double purpose in the work as if it had been planned both for the general public and for the student" (p. 15). There is no essential contradiction here. For which was Gibbons' *Decline and Fall of the Roman Empire* written? Plainly for both.

Moreover, is there any student specializing in all aspects of the six thousand-year long history of all the Persian arts? Miss Day seems to have forgotten that this is one chapter in a coherent inclusive presentation. If each chapter had been addressed to the specialist in that field, what would have remained of the unity of the work, which is one of its major aims and achievements? All but three of the chapters in the *Survey* were addressed to every one of the other sixty-seven contributors and the whole *Survey* was addressed to the cultivated public, *including* specialists not only in the fields represented in the *Survey,* but also in other aspects of art history, as well as in others of the humanities.

Nor does this involve a purpose that is "double." The purpose was single—to present as much as was possible of the significant knowledge available at the time about the history of the arts of Iran with as great precision, rigor, and objectivity of evaluation as could be obtained, in a lucid exposition, free, insofar as it could be, from technical jargon and the pseudo-scientific formalities that specialists often employ in addressing each other. It would have been easier to write in the so-called scientific manner which young students not uncommonly overvalue, like a new toy; but the educated public, including many mature specialists, are right to be repelled by it.

Miss Day herself recognizes at least the existence of such an audience: "Even a critic of art and aesthetics in general could use a Persian dish to illustrate an argument" (p. 31, n. 77); and again: "The reviewer has seen several people, not at all acquainted with the subject, turn over the plates and exclaim with as much delight as if they were seeing the pottery itself" (p. 13). These are but examples of an indefinitely large class of serious people who are entitled to respectful and sympathetic consideration, and to have their visual delight enhanced and fortified by knowledge. Their intellectual standards are often high, and they rightly demand complete intelligibility.

Later (p. 16), Miss Day decides that the *Survey* was planned "not for the orientalist but for the general reader," and in accordance with her implicit assumption that it should have been directed to the handful of orientalists the world round who have evinced interest in Persian art, she objects that the citations of Arabic texts are made with references to translations and other secondary sources rather than to the Arabic originals (pp. 18–19). Does she really think that a $350,000 publication should have been adjusted solely to the habits of the dozen or so Arabic scholars who have shown some concern for Persian ceramics? Furthermore, if they wish to refer to the original texts (which would only occasionally be of value) the *Survey* references in nearly every instance give the clues.

In the same vein is her objection to the editors' decision—made only after careful consideration and consultation with other experienced editors—to give the A.D. date first, with the Islamic date in parentheses, save in Ettinghausen's dated list, since the emphasis there was on the dated inscription. This form best meets the needs of the cultivated public; and the negligible number of specialists who are automatically oriented in the Islamic calendar might be expected to have sufficient mental energy to pick up the A.H. date quickly enough to avoid being disturbed.

In short, these objections, like a number of others, reveal an unfortunate kind of abstractness—in the strict logical sense—fairly common in some areas of the academic world, which is beginning to put in jeopardy support for scholarly research and publications. Donors are more and more insisting that research must be justified by realizable values to society; nor does this mean a philistine utilitarianism.

In another even more fundamental way Miss Day misunderstands the *Survey* and this particular chapter, for she ignores the fact that it

provides for the first time—provisional though it may be—a history of Persian ceramics, which had been declared impossible by nearly every scholar in the field who had expressed himself, even when the chapter was well under way.[2] That the great bulk of Persian pottery is here classified and attributed for the first time is never mentioned, nor does she gauge the *Survey* in relation to the work that had already been done in the field, or she would have had to give it a more generous rating. As Ettinghausen repeatedly said: "When the study of Persian ceramics is reviewed, it will be divided into two parts—before the *Survey* and after the *Survey*."

Moreover, it is doubtful if there is any volume that has to deal with any phase of the ceramic art that has ever given so much at one time—measured by cost, effort, new information and productive hypotheses. Yet the author has never before seen a review that made such insistent and often unreasonable demands for more and still more. There should have been more of everything: more collotypes, photographs, drawings, profile studies, technical details, transcriptions, citations from the literature. Some of these demands represent real desiderata, others are of doubtful value, and many, despite Miss Day's statements that they could have been easily arranged, were humanly impossible. Yet the *Survey* clearly announced in the Preface (p. XI) that it "by no means presumes to be a definitive work or to diminish the urgent necessity for further exploration and investigation. On the contrary, its merit is to be determined not merely in relation to the work that has preceded, but also by the new and constructive scholarship that it evokes."

Miss Day in effect rejects the whole plan of the *Survey,* but offers only conventional reasoning which gives no evidence that she has read or understood the detailed arguments presented in the Introduction for the integrity and continuity of Persian culture and the legitimacy of the program. The *Survey* is based on the conviction that it is possible and profitable to consider Persian art as a whole and represents an effort to treat it in terms of its environment and self-persistence and to trace its development, an entirely reasonable project, not uncommon in respect of the cultures of other regions. She counters with the assertion of the unity of the Islamic style (p. 18), an assumption usual a quarter of a century ago when the interest in Islamic art was so young that its special domains had not yet been explored, but a view now superseded. The internationalism which she insists, in the vein of the Munich Exhibition of 1910, is characteristic of Islamic art is in no small degree true of all art, which has seen innumerable interchanges and affiliations between different countries at all times. That the art of Persia after Islamic times was absorbed and controlled by Islam simply is not the fact. As Sarre frequently said, it was the genius of Persia that dominated in the Abbasid caliphate—a thesis that could be indefinitely expanded.

The ceramic art itself is a sufficient witness of the cultural independence of Persia. It is in large measure decorated with cosmological themes common in Iran for thousands of years. During the Islamic period it continues to depict both old and new Persian legends, and even reproduces Sasanian confrontations; it illustrates and quotes Persian poetry and, throughout nearly its whole course, defies the Islamic prohibition against the representation of living forms, while not one piece in a hundred carries a quotation from the Koran. Persian pottery of the Islamic

[2] "With regard to the classification it is not yet possible, with our limited knowledge, to group the material by factories, or even, except in a few cases, by district." R. L. Hobson, *A Guide to the Islamic Pottery of the Near East* (London, 1932), p. 5; Ettinghausen wrote: "Since practically no scientific excavations for material of the Islamic period have as yet been undertaken in Persia, the establishment of a definite provenance for Persian Islamic pottery is in most cases almost impossible." "Important Pieces of Persian Pottery in London Collections," *Ars Islamica,* II (1935), p. 45.

period is distinctively Persian, in but few cases can it be confused with wares from other countries and, despite its affiliations and derivations, it remains, on the whole, true to its own character.

Arabic was the *lingua franca* of large regions, but these nonetheless maintained a marked cultural autonomy which not only justifies but requires, sometimes at least, separate treatment in terms of their own traditions, character, and experience. The products of these regions are often as distinct as those of modern Europe. No one is likely to mistake a Persian for a Spanish rug, or confuse a Persian ḳalamkār with a Javanese batik. Persian, Egyptian, Turkish, and Maghribi mosques are, despite the presumed internationalism of Islam, structurally and aesthetically very different. The same is true for the pottery and even for theology. Far from being a burdensome restriction comparable to taking the entire field of ceramics as one's province, as Miss Day thinks (p. 18), the concentration on Persia was a rational and productive limitation that made possible whatever fresh contributions the ceramics chapter may have provided. Erdmann saw very clearly the value of such concentration. Writing of the advance in the knowledge of Persian carpets which he felt the writer had made, he says: "nur durch diese strikte Beschränkung auf Persien war es möglich, das Material in so eingehender Form vorzuführen" (p. 123).

Miss Day's objection that the author's discussion of general artistic considerations "is a panegyric of qualities of style which he considers to be purely Persian" (p. 17) is one of several criticisms that have been anticipated and forestalled in other parts of the *Survey* which she seems to have neglected. The writer neither thinks nor said that these qualities are exclusively Persian. That is Miss Day's interpolation. Rather, he was at some pains to point out in the Preface to the *Survey* that "certain qualities designated as Iranian belonged in more or less equal degree to contiguous or related cultures" and that, for example, "the qualities of Kufic calligraphy are not very different in Persia and Egypt" (p. xii). When she continues to protest that Persian art has much in common with the art of other Near Eastern peoples, she is merely superfluously agreeing with the author. Moreover, all the affiliations, resemblances, derivations, and the determination of what is common and what specifically different in these related cultures was to be the concern of the second half of the *Survey,* which was well started when interrupted by the war.

Back of Miss Day's criticism are several assumptions that many art historians, including the writer, regard as erroneous and as obstacles to the advance of the history of art. She defends, in effect, a naïve materialism. "Works of art," she says, "are physical objects" (p. 17). This type of materialism has been buried so deep and so long that it is hardly necessary to stamp on its grave. Rembrandt was, in this sense, to borrow William James' witty phrase, only about one hundred fifty pounds of warmish albuminoid matter, while a violin solo is in strict fact only the scraping of horsehair over the dried bowels of cats.

Nothing in Miss Day's review shows that she really understands the complicated problem of the relation of the so-called material fact to artistic expression. The naïve confidence, which she shares with many other young students, that the material facts contain the essential reality of works of art was engendered largely in Germany, but has been decisively rejected by the soundest art scholarship of Austria, France, and Great Britain. The material does play an important role that must be critically appraised, as the writer has been at pains to point out in a passage (p. 1450) which she ignores. Technical details may assist in attribution, but attribution itself is only a means to comprehension and evaluation, though Miss Day nowhere shows sufficient realization of this.

The *Survey* is a survey of Persian art, and Miss Day is reviewing a history of the ceramic art in Persia. Of this aspect she says almost nothing, nor is there anything in her article to show that she is aware of the quality of beauty the pottery presents and of the importance of this beauty to the Persians, who thought it fitting to write verses in praise of their pottery.

The same materialistic assumption has led Miss Day to a peremptory and rather presumptuous objection to the writer's identification of the function of ceramic contour with the Platonic idea, a comparison which she feels is an inappropriate and unwanted "fantasy" (p. 17), although many would regard the comparison as just and illuminating. But Miss Day will have nothing but facts, although she would clearly be hard put to it to say what a "fact" is. That a fact is a highly selective, synthetic, hypothetical, ideal construct might surprise her, though that has been practically an axiom in the theory of scientific method from the time of Kant through Ernst Mach to the present moment. Conversely, the idea, the ideal—even the fantasy—may attain a reality and an effective potency that have priority and authority over the fact. Those who do not realize this are strangers in the field of the fine arts.

Even more unsound and more damaging to progress in the field of Near Eastern art is a pious dogmatism, widely held, that she quotes from Aga-Oglu (p. 48), which needs to be resolutely challenged: "Writers on Persian miniature painting are either Orientalists, without the methods of art historical research, or art historians without the necessary schooling in Oriental discipline, or enthusiastic amateurs." "This applies," she adds, "equally to the field of ceramics, where stylistic criticism and the work of the orientalist and epigrapher need to be combined with the results of ceramic technology and archaeology."

Combining the work of the art historian, not only in stylistic criticism, as Miss Day says, but also in aesthetic evaluation and historical analysis, with the work of the orientalist, the epigrapher, the relevant technologists whenever possible, the archaeologist, the iconographer (whom she completely ignores), and the political and cultural historians, was the program of the *Survey* and is its notable accomplishment to a degree not hitherto attained in any comparable publication. But to propose that these eight functions should be attempted by one person, as Miss Day suggests, is to take the work of them all too lightly. The task of the art historian alone is too complex for the compass of one mind unless it has exceptional talents and capacity for work, for he should be also aesthetician, cultural historian, and often philosopher and iconographer as well. To attempt to add a real mastery of Oriental languages—at least three would be necessary for Islamic art if this prescription is to be taken seriously,—epigraphy, which the best general orientalists know better than to undertake, it being another specialist's job, and the various laboratory techniques—chemistry and metallurgy—is to run the risk of becoming merely an amateur in everything.[3] For many reasons the analogy of European languages is inapplicable.

Aga-Oglu, for example, is a presumed master in Arabic and Persian, as well as having had long training in Islamic art. His admirable qualifications did not protect him from the most egregious error ever made in the history of Persian ceramics when he declared a fourteenth-century bowl in the Freer Gallery to be dated by inscription in the tenth century, an error which, if it had been more plausible, might have devastated Persian ceramic chronology

[3] A reading and speaking knowledge of any or all of the three principal Near Eastern languages is most desirable. But this is quite a different matter from that complete control which guarantees the literal accuracy of the reading of every text and every inscription as well as an inner awareness of all its recondite implications. Anything less than this opens the door to error.

for a generation. Aga-Oglu's magnanimous and prompt retraction did him more credit than if his original guess had been correct, but his error illustrates the dangers when one person working in this field tries to serve too many masters.

The simple fact is that the requirement which Aga-Oglu and Miss Day lay down is not sound. In England the advances have been made in the history of Islamic ceramics by Hobson and Rackham, neither one knowing Near Eastern languages. In France, Migeon was the first, perhaps in Europe, to set the Islamic arts in some kind of order, and Koechlin, who like Migeon claimed no qualification as an orientalist, made an important contribution to ceramics history in his monograph on the fragments from Susa.[4] Sarre has been a pioneer and leader. The history of Near Eastern art cannot be written without constant expressions of obligation to him. He, likewise, has never used Oriental languages in his work and does not believe that the historian of Near Eastern art should try to do so.

Who are the orientalists who have written the great histories of Near Eastern art? Not De Vogüe,[5] not Briggs,[6] not Creswell,[7] the latter a great historian of architecture who has always relied on specialists in the languages he needed to consult. The simple fact is that it is impossible for a single person to have the talents and time necessary to master all these subjects and still do creative work in Near Eastern art history, as van Berchem clearly understood. He urged repeatedly that those ambitious to achieve in the field of Near Eastern culture should not try to combine language and epigraphy with the study of the arts.[8] The languages are absolutely indispensable, which is all the more reason that they should be entrusted to full-time specialists.

True to her materialistic bias, Miss Day feels that it is a great fault in the *Survey* that the chapter on ceramics does not include profile drawings (p. 17), and a complete separate catalogue, with the technical characteristic of each object (p. 16). It might be assumed that the writer knew the value of profile drawings, and, as a matter of fact, they were considered but had to be given up for practical reasons. The author would also have been glad to have included such full technical details as paste, slip, glaze, pigments if any, foot construction, variations in thickness, and weight, although he is sceptical of their value as dependable clues to provenance. But while Miss Day in her review could indulge in "fantasy," the writer was held down by prosaic "facts." A total of seven hundred twenty-eight vessels is referred to in the chapter, and these are distributed from Leningrad to Los Angeles, from Mashhad to Seattle. To catalogue them separately as did Pézard, who had all his pieces in one place, and as Miss Day thinks the *Survey* should have done, would have cost from $12,000 to $20,000 and about two years of time. Neither time nor money was available.

Moreover, even if funds had been available and time sufficient, it is doubtful that the detailed technical catalogue for which Miss Day asks would have justified itself. The writer is convinced that the part the material plays in the determination of artistic expression and the utility of a knowledge of technical construction as a guide to attribution have both been much exaggerated. Great hopes were entertained that the technical analysis of weaving structures

[4] R. Koechlin, *La Céramique musulmane de Suse* (Paris, 1928).

[5] C. J. M. de Vogüe, *La Syrie centrale* (Paris, 1865), and other works.

[6] M. S. Briggs, *Muhammadan Architecture in Egypt and Palestine* (Oxford, 1942).

[7] K. A. C. Creswell, *Early Muslim Architecture* (Oxford, 1932–40).

[8] Miss Day frequently quotes Dimand, always with approval, but Dimand is one of those who believes that it is dangerous, if not impossible, for one to be a first-rate art historian and, at the same time, a first-rate linguist and epigrapher.

would control the attribution of carpets and help greatly in the classification of textiles. Both these hopes have been disappointed, despite some acute and laborious studies.

The problem, as Matson's admirable review shows, is decidedly more complicated than Miss Day seems to think.[9] The clay used for the body is subject to all kinds of variations. A variety of clay deposits may be available in Persia within an area of only a few miles and the clay "even within a small deposit may not be entirely uniform," as Matson points out (p. 60). Moreover, as Matson says, the clays could be imported; and there is an elusive Armenian text, supposed to be in the Etchmiadzin Library, which refers to a migration of potters who carried their clays with them. Matson further shows that the rather confident references to lead and tin glazes are a little dubious—"the visual recognition of lead glazes is very uncertain; therefore, phrases such as 'it appears to be a lead glaze' have little value" (p. 62); nor does a recognition of tin seem to be much surer, as there are other "opacifiers" than tin. Matson concludes very sensibly that these technological problems "*might* (italics mine) aid in the classification and identification of certain wares . . . . but until adequate shard material is available for study, little can be done but point out the possibility of such work" (p. 63).

Some day the techniques of Islamic potteries will be thoroughly canvassed and the results will no doubt be, as Matson says, "an important contribution to the history of ceramics" (p. 63), but, unfortunately, that day is far off.

Miss Day's comments about the quality of selection of the color plates suggest that she has only slender qualifications for judgment. A few—perhaps eight or ten—of the plates are definitely unsatisfactory. Most of these had to be reproduced from old blocks and the funds were not available for proper correction, nor was it possible in such cases to have the object at the color-plate maker's for the desired revision. Others are not, strictly speaking, first class. However, the majority in general surpass anything that has been done in the field of Near Eastern ceramics, save for publications using few plates on which the publisher could lavish the necessary time and money.

Miss Day thinks that the color plates are inferior to those in Koechlin and Migeon's *Oriental Art* (p. 13).[10] The story of these plates is an indication of how far she has gone astray. Three weeks before the contract date for the delivery of the prints, which like all the rest were planned as a reprint job, copper thieves stole the entire set of plates. Only a very few prints had been run off. The publisher, Albert Lévy of Paris, in despair farmed out the Rivière illustrations[11] in small groups to every color-plate maker in Paris—good, bad, and indifferent—who could promise to turn in the required number of prints in less than three weeks. It was impossible to make any corrections, and Lévy felt that the high standards of his house were seriously compromised.[12] He told the

[9] "The terms lead, tin, cobalt, and manganese often are found in discussions of Islamic glazes *when there is no experimental evidence to support such identifications.* Unfortunately, such unsubstantial statements when used in the description of a specific ware or even in general discussions may lead to further misconceptions and serve as slippery stepping stones for students using the reports. Apparently, some authors think that an Islamic glaze must have either lead or tin in it and do not consider the possibility that both may be present in the same glaze or that neither may be present. *Usually the inclusion of such tenuous identifications adds little of cultural or scientific value to the article.*" Matson, p. 61, italics mine.

[10] R. Koechlin and G. Migeon, *Oriental Art* (New York, 1928).

[11] H. Rivière, *La Céramique dans l'art musulman* (Paris, 1913).

[12] By contrast, the color plates in the *Survey* were meticulously corrected over months of time—some being remade as many as three or four times. Corrections on

writer that he would never have permitted the publication of the book had he not been forced by his German, English, and American contracts.

As might be expected under such circumstances, a considerable number of these plates that Miss Day admires are untrue to the original, as the writer has been able to establish by comparing all but one with the object. For example, the plate of the famous Basilewski luster-painted jar in the Hermitage Museum is quite misleading. In the illustration it has a decided ruby tone, such as one finds when luster is overfired, but actually the jar is dull yellow and brown, with almost none of the red glints.

Miss Day's lack of competence in this whole complex question of reproduction techniques is evident also in her discussion of collotypes versus half-tone color plates. She wishes that "only collotype had been used." Collotypes can be more successfully studied with a glass than can screen plates, but the screen process gives a more brilliant and harder surface, with more glittering highlights, important qualities of glazed wares. In support of her demand for collotypes only she says: "One has only to compare Plates 651 and 652, or Plates 654 and 655 to wish that only collotypes had been used" (p. 13). But collotype Plate 651 represents a brilliant bowl, while the bowl in Plate 652, rendered in screen process, has a quiet surface, so that the contrast is due rather to the differences between the two objects than to the reproduction processes. Again, Plates 654 and 655 are hardly comparable because of the marked difference in the scale of both the objects and the decoration, as well as the variation in quality between the two objects. There is very little in the piece represented in Plate 655 that is not presented in the plate. On the other hand, many who might compare the collotype Plate 654 with the screen process Plate 755 might conclude that the latter method more adequately represents the characteristic texture and surface qualities of a glazed vessel.

Miss Day adds that she would have liked to see only collotypes "even if this meant limiting the total number of plates in color to ten or twenty." Such an impoverishment would have given a distorted impression of this particular art and also of Persian art in general, for, as is repeatedly insisted in the *Survey,* color is a major factor; and it would also have deprived students of adequate visual images of some types represented in but few museums. To have sacrificed these major values for a little more accuracy of detail would not have been justified.

In view of her strong preference for collotypes, an acknowledgment would have been in order for the immense number of black and white collotypes provided in the *Survey*—more than in any other single work the writer knows.

Besides, who was going to pay for the additional six or sixteen collotypes that Miss Day requests? The editors had at their disposal no general fund which they could use for such luxuries as additional color collotypes. Similarly, the cost accounts for the fact that objects from only four American museums were shown in color, a fact that the writer regrets more than does Miss Day. All the color plates in the *Survey* were donated, and American museums were not eager to pay the high cost of colorplating in America. In short, the editors were not free to choose or to distribute the color plates exactly as they could wish, even though they could and did exercise a negative selection by rejecting color plate donations on the ground of superfluity or inferior quality.

The discussion of the selection of material for illustration is equally superficial and unrealistic. Miss Day objects (p. 14) to the illus-

the screen plates ranged from ten to as high as sixty. It is not too much to say that there has never been a large number of color plates in a single publication that were more accurate in relation to their originals. Laurence Binyon, a just and sensitive observer, wrote of them: "There are many plates of breath-taking beauty."

tration of the cobalt blue and green painted bowl in the Moore collection on the ground that Pézard had already published it. Again, she is thinking not of the audience to which the *Survey* is addressed, but of herself and colleagues who have access to the very few libraries that own Pézard. Moreover, she writes: "Pézard gave a faithful objective reproduction of it, showing the broken places .... in this illustration the bowl appears to be complete; one trusts that it is the color plate only, and not the bowl itself, which has been so retouched .... why make a new color plate? ..." It was not strictly speaking a new color plate. This plate was made from the Pézard illustration. As a matter of fact, the cracks are more evident in Pézard's plate and are more conspicuous than in the bowl itself; hence in the printing M. Lévy suppressed the black and white block a little and thus came nearer to the actual appearance of the bowl itself, which has never been retouched in any way since the Pézard plate was made. She says that Pézard is therefore more "faithful." Faithful to what, does she mean? Not certainly to the artist's intention, for he designed the bowl as intact; and the important fact for the art historian is not the visibility of accidents that interrupt the artist's composition, but the perfection with which that composition can be recaptured. Therefore, to the art historian the Pézard plate, insofar as it does make the cracks more conspicuous, is less truly objective and faithful.

Miss Day objects when the same type of pottery is shown in a number of different plates (p. 14). In the first place, illustrations of the variations in a type are essential to an understanding of the character of the type, and especially facilitate the quick formation of a generalized image which is easily retained, as experiments have shown.[13] In the second place, multiple examples are necessary to appraise relations of both similarity and difference between various craftsmen, and also to trace the formation and transitions of schools, and the slow or rapid development of style. Nor is an art every properly presented for either the historian's or the aesthetician's purposes if only masterpieces are shown; indeed, the masterpieces themselves will be fully appreciated only in relation to examples of the mass of standard products in which they constitute the rare superior variant.

One sentence (p. 14) reveals rather eccentric criteria for the selection of color plates: "One bowl, combining polychrome and luster," she writes (Pl. 705), "has not only been previously illustrated in color by Pope, but is an imperfect piece; most of the luster has worn off."[14] (1) The fact that the plate was illustrated in the *Burlington Magazine* is no reason for not publishing it again in its proper sequence and relation; (2) the *Burlington Magazine* is not at hand for a large proportion of *Survey* owners (the writer has never seen a copy in Persia); (3) despite the loss of the luster, the bowl is a very beautiful one;[15] (4) it is a signed piece, the work of a famous ceramist and (5) is a very important item in the definition of a school (cf. *Survey,* pp. 1597–98); (6) if imperfect pieces are to be excluded it would be impossible to illustrate the history of Persian pottery with any degree of justice. How could a costly work that pledged its subscribers that every effort would be made to secure "system

[13] This policy was clearly set forth in the Preface which Miss Day has apparently ignored, although it has a vital bearing on most of the subsequent text: "There has been a special effort to confront examples of one class and to supply for each type a sufficient range of specimens to facilitate the formation of conceptual images, most difficult from either verbal description or from a single illustration." *Survey,* p. xiii.

[14] A. U. Pope, "A Signed Kashan Mina'i Bowl," *Burlington Mag.,* LXIX (1936), 144–47.

[15] Sir Kenneth Clark, director of the National Gallery, expresses complete agreement with the author's high estimate of the artistic value of this piece.

and completeness" justifiably omit such a piece?

Miss Day's concentration on ceramics leads at several points to demands that could not properly have been met. She protests, for example, that it would have been better if the two luster mihrabs had been shown together (p. 14), and again: "If the editorial policy had not separated tiles in museums from tiles *in situ* . . ." etc. (p. 53). The point of view here revealed, that of the specialist aware only of his own problems and demanding for them priority, is not only entirely hostile to the spirit of the *Survey,* but it is a weakness of American art scholarship that retards progress and understanding in many fields. Architecture and architectural ornament have their rights and devotees also; and illustrations of the great mihrabs belong to both the architectural and the ceramic sections. As for the separation of tiles in museums from those *in situ,* the reasons were numerous and compelling. Ettinghausen planned, as his footnote reveals (*Survey,* p. 1667, footnote 1), to give the list of dated faïence *in situ* in the second section of the *Survey.* Also, the illustrations of tiles *in situ* are often unavoidably in such small scale that important features may be difficult to examine critically.

The Early Islamic Periods

And now to consider problems that Miss Day raises about the wares themselves: the writer is charged with dereliction in his treatment of the early Islamic wares. "It will be remembered," Miss Day writes, "that much early Islamic pottery was discussed by Ettinghausen in an earlier volume of the *Survey.* Pope made no allusion to these various types; they are not summarized or included in his present listing. This is a fault in editorial policy; it makes it *impossible* [italics mine] for the reader to get a clear idea of what Persian pottery was in the early period" (p. 20). That without a summary of Ettinghausen's comments it is impossible to gain a clear idea of the pottery of the first years of the Islamic period is so exaggerated as not to have much meaning. In the first place, the serious student will find Ettinghausen's comments perfectly intelligible by themselves. In the second place, Ettinghausen discusses very few early Islamic pieces, and even though they may have been made after the Battle of Nehavend or the death of Yazdigird III, that does not necessarily make them in any cultural or artistic sense Islamic.

In technique, decoration, style, and iconography these wares are merely a holdover from the Sasanian period. Ettinghausen's task was Parthian and Sasanian pottery, a subject to which he scrupulously adhered. An important merit of the *Survey* is the admirable way in which the various contributors avoided duplication or conflict with colleagues whose work was different, though related. Had Ettinghausen really discussed "much early Islamic pottery" in his chapter, both he and the editors would have been disloyal to one of the essential principles of the *Survey.*

The lag in the establishment of Islamic influence in Persian art following the Arabic conquest and the persistence of Sasanian modes for a long time are clearly set forth in the Introduction (pp. 18–19) and in other places as well. In the chapter under review the writer set down whatever knowledge he had on the subject and warned the reader that "exactly what Persian pottery was like in the first century and a half of Islam must remain largely a matter of speculation until the archaeologist can supply more facts" (p. 1467).

Sometimes Miss Day generously apologizes for lapses of a semimechanical nature and has with great ingenuity filled in several missing references in the author's text, but she does not use the same tolerance in more important instances where even a little imagination on her part would have disposed of her misunderstandings and objections. She asks why pottery considered to be Syrian and Umayyad should have

been included at all in a survey of Persian art (p. 21), and then goes on to speak at as great length as the *Survey* itself concerning this problem which she had already declared irrelevant. It was not easy to decide whether these wares were to be included or not, but as they had been frequently assigned to Persia their omission would have been equally open to objection, and a summary dismissal, considering the state of our knowledge at the time, would have merited a charge of dogmatism. It is often a real contribution to the understanding of the style of one region to eliminate types which have been incorrectly assigned to it. Her discussion of these wares, the most conclusive they have had, adds some important items to our knowledge, although she should not have ignored the author's arguments for a Syrian provenance.

More important is the challenge to the widely accepted theory that Chinese wares played a decisive role in stimulating the renaissance of Persian pottery. She doubts that Chinese wares had been exported to Persia before the Tang period, which, by the way, opened well before the Islamic period in Persia. That the very few sites that have been scientifically explored have so far revealed no examples of pre-Tang wares is negative evidence of little value. On the other hand, the trade between China and the West, both by land and sea, was of enormous proportions, especially in Han times, and it was of such varied content that it is reasonable to suppose that it included pottery. At any rate, in Persia the earliest pottery of the Islamic period which breaks away from the Sasanian tradition is the imitation of Tang wares of the eighth and ninth centuries (Pls. 568–70 and 572A). The validity of the hypothesis of Chinese influence is not impaired by citation of the continuity of certain indigenous techniques nor by the example of the East Persia style, which is of later date. It is artistic ideas and influences that are affirmed and substantiated by the examples cited and by other evidence that calls for more space than is proper in an answer to a review.

Miss Day corrects the description, in which the author was following Hobson, of the technique of the cobalt and white wares, but, while arguing strenuously, does not produce any evidence that invalidates the writer's hypothesis that these wares were made in Persia. She rejects the author's theory that the Tang splash ware is Persian in origin (p. 29), although this was the opinion of Erich Schmidt, whom she thinks the writer should have consulted more frequently, and was based on his findings at Istakhr. She goes on to say "that the earliest examples of the imitation of Tang splashed wares come from Antioch and Tarsus, and not from Persia." How can she possibly know this, except by divination? The hundreds of Tang splash vessels and the thousands of shards that have appeared in Persia have not been authoritatively dated. It is an elementary principle of method that no comparison is valid unless the value of both terms of the equation is known.

Furthermore, Miss Day is so sure of herself that she does not hesitate to charge the writer with misstatement that sounds almost like an accusation of his having fabricated authoritative support for his theory. She says (p. 24): "Another misstatement follows: (then quoting the writer) 'When the type came to light it was designated Samarra but Professor Sarre saw at first that many of the pieces found at Samarra could not have been of local origin and assigned them to Persia' " (*Survey*, p. 1485). After some argument and a quotation of one sentence from Sarre, she affirms: "Indeed, Sarre considered the blue and white to have the same origin as the luster ware, namely Mesopotamia." Apparently, Sarre is for Miss Day only an index card or a printed page, instead of being a great scholar with a mind very much more richly stored than has ever been recorded in print. The statement which the writer made was in no sense a misstatement but was an actual quotation from

Sarre, who in discussing this whole problem with the writer at considerable length, both in 1937 and 1938, said that from the first he had believed the type to be Persian, and expressed his satisfaction over what he designated as the convincing proof adduced in the *Survey* that it was Persian. When Sarre wrote the sentence Miss Day quoted, he may have been momentarily undecided; but his much more full and explicit statements to the writer are the correct expression of his views on the subject. The *Survey* text itself is the best answer to her attempted reaffirmation of the Mesopotamian attribution.

Similarly, Miss Day, while granting the identity of the cobalt blue wares with the early luster wares, again vigorously insists upon a Mesopotamian provenance. Some of her arguments are shrewd and learned, but they are unconvincing. She says (p. 26) that no tin glazes have been found in Persia before the Islamic period. This, however, proves almost nothing, since little pre-Islamic glazed pottery has been found—certainly not enough to support negative generalizations. Luster, according to Miss Day, was used exclusively on white tin glaze; hence she concludes: "It must have been made in a country where it [that is, a tin glaze] had been previously made for centuries." Her whole argument is speculative and dubious[16] and is quite refuted by the simple fact that luster wasters and kilns have been found, as the writer said, at both Sāva and Susa. Of these wasters she is very suspicious. But one of the Sāva wasters was shown to Hobson and Raphael and also to Ettinghausen, who had it in his possession for several days in 1935; all three of them agreed that the waster proved that early luster was made in Persia.[17] But Miss Day is really

[16] Since Miss Day has argued both that the Islamic style is international and that potters migrated hither and yon, it is hard to see why she thinks the knowledge of tin glaze was necessarily confined to Iraq. It is perfectly possible that it was brought to Persia and the invention of luster painting followed subsequently.

[17] However, Ettinghausen now writes (letter to the writer dated July 7, 1942): "Whatever I may have originally thought of the luster fragment from Sāva, I am since many years convinced that it cannot be used as an indication of the production of early luster in that city, even if it was found there. The piece is not what one usually calls a waster, but rather a 'second', as it would be called in the glass and pottery section of a modern department store. On the outside of this vessel a small piece of another vessel was stuck in the firing, which in no way, however, impeded the usefulness of the vessel. It did mar its beauty if looked at from one particular angle. Even this is not completely certain because it may have been a bowl whose inside was the only part to be looked at. You might think that this is a rather hypothetical statement of mine, but I know at least of one other case where these circumstances are certain. I once saw a piece of Chinese celadon which also had part of another bowl stuck on its outside. In spite of its deficiency, it was exported from China to a scientifically excavated site in the Near East."

In this writer's opinion, the firing accident incurred by the luster fragment that Ettinghausen examined, did damage the usefulness of the vessel; for not only is there a piece of another vessel adhering to it, but there is also a protuberance of glaze so sharp that the writer, in a careless moment, cut his hand on it. Moreover, the interesting example of the imperfect Chinese celadon which had been exported to the Near East, is hardly a parallel. The Chinese boasted rather contemptuously that they exported their inferior wares, which in the case of celadon they sent out to widely scattered markets by the ton and shipload. This celadon was not a luxury ware in the sense that the gold luster of the tenth century must have been, vessels made for connoisseurs to whom a serious flaw like this would have been offensive. Incidentally, it would be hard to find any "second" in the "glass and pottery section of a modern department store" as defective as the vessel in question was.

Moreover, it is one thing for China to send to Western Asia porcelain, on which she had at that time a monopoly, which was imperfect, and would have been another for Iraq, less advanced then than Persia in both the quantity and the variety of her ceramic wares, to have sent her more productive, immediately adjacent neighbor a defective specimen.

Furthermore, the other luster waster found with the piece referred to by Ettinghausen consists of two size-

under obligations to justify her ignoring of the report of Unvala, an experienced archaeologist, who affirmed the finding at Susa, under conditions of scientific control, not only of luster wasters of this early period but of two actual kilns, one found by himself and the other by De Mecquenem on another occasion and the finding of supports that were actually coated with luster.[18] Neither kiln nor wasters have been found in Iraq. How does Miss Day, who insists she wants facts and not fantasy, conjure away these realities?

She says in effect that no wasters should be reported until they are examined by a technical expert, until the exact nature of the clay and glaze is determined, and they can be illustrated —all desiderata which are frequently impossible except at the cost of long delay. Such conservatism may chiefly express an emotional need for security and can be a brake on intellectual progress. "Calculated risks" and an aggressive research offensive are equally essential. "Scientific caution," much lauded by nonscientists, is often a disguise for intellectual timidity.

But Miss Day is not always overcautious. In her desire to prove that Mesopotamia was the home of the cobalt and the luster wares, she, it seems to the writer, overextends the quotation from Yāḳūbī (p. 26), who, according to her translation, says merely that Mu'taṣim brought pottery makers from Basra and Kufa. There is no assertion or even implication that these were makers of artistic pottery. The reference might just as well be to purely industrial products: kitchen wares, water, storage, and drainage jars that would be needed in the new city in stupendous quantities.

The finding of a few shards of lusterware at several Mesopotamian sites, which the writer overlooked and Miss Day mentions, does not prove anything about the origin of the wares in question, any more than Fusṭāṭ fragments indicate all such wares were made in Miṣr. The point is that early luster has been found in quantities at a number of widely scattered places in Persia.

Miss Day's stubborn scepticism makes her also suspicious of the writer's reports that a luster plate was excavated at Istakhr, with an inscription which a competent Persian scholar reported as a Persian name. She complains that she "wishes to know this name, what makes it Persian, and the name of the scholar" (p. 19), almost as if she doubted the writer's veracity and the quoted scholar's competence. The facts are as follows: the plate was excavated during the Oriental Institute's excavation at Persepolis by Herzfeld, who showed the piece to the writer and gave him the translation; but, because delicate negotiations concerning the excavations were then in progress between the Persian Government and the Oriental Institute, Herzfeld asked that he be not more precisely quoted. The necessity for reticence, by which the writer was in honor bound, no longer exists.

Even her criticism of some of the relatively unimportant supplementary evidence is of the same speculative character. She says of Ibn al-Faḳīh's statement that gilded dishes were made at Rayy (p. 27) that "they may well have been metal inlaid with gold or wood and gilded," yet in the more than fifty years of excavations on the vast site of Rayy, from which many thousands of objects have been recovered, no trace of anything of the kind has ever come to light. In fact, gold inlaid vessels are from a

able fragments of vessels fused together in the firing. Nor is there any reason for doubting the Sāva provenance of these wasters. The writer acquired the piece in question for a pittance, from an excavator who had done practically all his work for years on this site, and in any case certainly would not have had any Iraq wasters.

As soon as the termination of the war makes some of these wasters available (they are in Persia and England) they will be published in the *Bulletin* of the Iranian Institute.

[18] J. M. Unvala, "Note on the Luster Ceramics of Susa," *Bull. Amer. Instit. Persian Art and Archaeol.*, IV (1935), 79.

later period and probably from another region. As Hobson said: "This statement [Ibn al-Faḳīh's] could refer only to luster wares."[19]

In her anxiety to discredit the theory of Persian origins, Miss Day occasionally even distorts somewhat the writer's statements and credits to him judgments that he did not make. For example, she writes: "After stating that the lusterware was made in Persia (*Survey,* p. 1493), the author modified this idea and said: 'As for the polychrome luster painted type, it was probably made in Iraq' " (p. 26). To say that luster ware was made in Persia is certainly not to say that it was never made anywhere else,[20] and to state that polychrome luster was probably made in Iraq is no modification of the first statement. As a result of migration of potters, the same types may have been made in two quite distinct regions as was the case, for example, with the "Lakabi" ware, which was made in Persia and in Syria also.[21] The real question is, where was the type invented and developed? Here the writer said with a reserve that none would suspect from Miss Day's account: "All these indications together, while they may not provide final proof, do constitute a fairly definite indication that it was in Persia that the metallic luster effect was invented and developed" (*Survey,* p. 1494).

Her overreadiness to disparage the writer's evidence on this question has led Miss Day to other untrue and indefensible statements. Thus, she writes: "The author has paid no attention to the opinion of various excavators, for instance, Erich Schmidt" (p. 27). Miss Day could not be more wrong. The writer has discussed the question of these wares with probably more excavators than anyone else—with Sarre, at length; Herzfeld, briefly; with Unvala, Schmidt, Upton, Wilkinson, and Hauser, and with a half-dozen commercial excavators in Persia who had brought up more of these wares than all the others together. Moreover, he not only sought from all these men facts rather than opinions, except in the cases of Sarre and Herzfeld, but he also, during several different sojourns in Persia, examined hundreds of the shards that they had recovered.

Miss Day quotes the opinion from Schmidt which she thinks the writer neglected: "The scarcity of the vessels and even sherds of the first two categories (blue and white, and lustre) at Rayy *seems* [italics mine] to support the theory of the importation of these wares, but not necessarily from abroad" (p. 27). The only positive element in this statement is that vessels and shards of these types were found; the rest is negative deduction. Schmidt was able to explore only a small percentage of the vast site of Rayy, which occupies at least ten square miles, and in any event scarcely a square yard of this has been left untouched by previous commercial diggers. In 1930 after fifty years of excavation there were nearly a thousand diggers still working on it, often going to very deep levels. Rayy is a site which supports few negative generalizations.

The Medieval Period

The date of the white beakers (*Survey,* Pls. 561 A, B; 592 A, B), which Kühnel, Hobson, all the excavators in Persia, as well as the writer, have placed in the eleventh or even the tenth century, Miss Day questions without giving

[19] Hobson, *op. cit.,* p. 10.

[20] The writer had already warned against such a misinterpretation in his communication to the Leningrad Congress: "To show that certain pottery types were made in one center does not prove that they were exclusive products of that particular locality." A. U. Pope, "Suggestion Towards the Identification of Mediaeval Iranian Faïence," *Mém. III^e Congrès international d'art et d'archéologie iraniens* (Moscow–Leningrad, 1939), p. 173.

[21] The dish shown in the *Survey,* Pl. 604A, is almost certainly Syrian. The difference between the two types was clearly demonstrated in the Persian exhibition in New York, 1940.

reason. She writes: "The reviewer sees no reason to suppose that the manufacture of white relief ware should have stopped at the end of the eleventh century and, agreeing with Miss A. R. Hall and Miss Gunsaulus (see p. 1519, n. 2), *feels* [italics mine; feeling is a purely subjective process] that it may have been made during the twelfth and thirteenth centuries" (p. 34). There are plenty of reasons for the early attribution of this ware and none of those who have rejected it has as yet offered a single word in support of the dissident view. One reason for the early dating is the extreme crystallization and disintegration of the glaze, permitting an exposure of the paste, which has turned yellowish, a characteristic of what might be called the "Kashan body". Such deep crystallization has not been observed on vessels of the thirteenth century, and apparently not on those of the twelfth century. Moreover, the excavators in Persia insist that these pieces have all been found at very deep levels. And colored glazes that are definitely of the twelfth and thirteenth centuries appear on vessels that are clearly evolved from the white type.

Miss Day states (p. 34, n. 94) that the late Oscar Raphael's blue-glazed bowl with the investiture scene (*Survey,* Pl. 768B) should have been discussed with the white wares. She is evidently judging from the illustration only, without having examined the bowl itself; yet even in the collotype plate it is clear that there is little relation. The piece, which probably came from Rayy, is one of a large class and much later; the body is coarse and gritty, the walls relatively thick (in otherwise similar Kashan shards the walls are quite thin), the whole piece rather heavy and the foot irregularly exposed, contrary to the meticulously complete covering of the white ware.

The reviewer is right in calling attention to the ambiguity of the writer's statement about a bowl in the Barlow collection (London), which "looks and feels like porcelain" (*Survey,* p. 1504, Pl. 589A). There was no intention to imply that the bowl was actually porcelain, which it almost certainly is not, but it was cited as an indication of what the Persian potters were aiming at. In view of Miss Day's exacting demands for the announcement of wasters, the writer hesitates to mention that in his collection there is a Kashan waster of true porcelain—a collapsed blue and white bottle with purely Persian ornamentation—that is probably sixteenth century.

If Miss Day has examined the Eumorfopoulos carved polychrome plate with pseudo-Chinese motives (*Survey,* Pl. 603), she did not do so carefully; and indeed even if she is depending only on illustrations, she has not observed it well for she states categorically that it is not carved (p. 34). It is carved, with quite deep and varied modulations, especially in the foliation on the white ground. Other pieces of this type are only heavily incised, but some of these are so broadly cut that they are on the borderline between carving and incision.

Nor could anyone with an appreciative insight into Chinese art even "wonder" or have an "impression" (again very subjective processes), that this design was executed by a Chinese craftsman, whether transplanted or not. It is a charming play on a Chinese theme, with Persian hyenas substituted for the traditional Chinese "foo-lions," and the characteristic loose technique of Persia.

Miss Day's logic goes astray here, too. She says that the writer's opinion that this polychrome carved and incised type developed out of the monochrome carved wares "implies that the techniques and style are purely Persian inventions." Not necessarily. The Persian potters may have got the idea of developing their own monochrome carved and incised ware into a polychrome version from seeing the polychrome incised wares of Tang and Sung China. By such confluence of varied streams does history flow.

But if the Persian potters did take a hint

from the Chinese incised polychrome wares, the immediate result was not the "Lakabi" type, but the "Aghkand" ware, which is only incised with the fine sharp lines unambiguously characterized by this term and which also has the same color combinations as are present on the typical Tang pieces in this technique (*Survey,* Pls. 607, 608).

Relative to the silhouette figural ware, she asks why "Ettinghausen's suggestion of their relation to the shadow plays is not favored" (p. 43). The theory was ingenious, was ably put, and may be true, but the writer did not favor it because illustrative silhouette is and always was normal to the Persian artistic temper and practice, and vivid examples of it, including subjects that could have no relation to the shadow plays, are common in many periods.

The "Transition Luster Style" that the author proposed, which has commended itself to a number of colleagues, she does not find convincing (p. 37), partly on the ground that some characteristic decorative features of the so-called transition pieces like the Sachs and Eumorfopoulos dishes (*Survey,* Pls. 631A, B), such as the fine scrolls, "are much like those of a jar dated 575 H./1179 A.D. (Pl. 636 B)"; but subsidiary ornament in Persia often has a strangely long life—with such slight modification that it cannot be used for dating purposes. Interstitial ornaments of the Mosque at Gulpaigan (1104–18 A.D.) are as close to the corresponding elements in the Mosque at Varāmīn (early fourteenth century) as scrolls on the Sachs bowl are to those on the British Museum jar. Stucco guard stripes last some three or four hundred years with almost imperceptible changes; and the so-called Seljuk leaf begins in Samarra and is but little modified in Kashan in the fourteenth century. Miss Day is right in saying that "if a single object shows a combination of styles it must be dated according to the latest of these styles" (p. 37), but she still has not proved that the elements she regards as late in the so-called "Transition Style" did not exist in the eleventh century. As a matter of fact, the fine scrolls referred to are not very much alike—those on the British Museum jar are by comparison coarse and clumsy, entirely wanting in the delicate and consistent coverage that marks both the Sachs and the Eumorfopoulos pieces. Plate 641 B, which she with reason cites in support of her view, is dated by the writer too late. It should be late twelfth century.

The "Rayy Monumental Lustre Style," which Miss Day apparently accepts as a class (*Survey,* Pls. 632–35), is, in her opinion, "much later than the author thinks, that in fact they are identical with others like the Raphael plate (*Survey,* Pl. 641 A) which the author would separate by fifty or sixty years" (p. 37). One has only to consult the illustrations to see that stylistically there are significant differences between the two types. The first are in the grand manner, irrespective of dimensions, the figures isolated in a more abundant space, the scale larger, the feeling concentrated, vivid, powerful. The Raphael plate is crowded, the figures are smaller in scale, dispersed, and relatively unco-ordinated—all marks of comparatively later dating in practically all the arts. The writer did date the Raphael plate too late. It really belongs to the late twelfth century, and in fact is closely connected with the monumental style, as Miss Day urges against the writer, who incorrectly placed it with the miniature group; but in the writer's opinion it is a relatively late expression of the monumental school, done when the original simplicity had begun to be overcome by the luxury and particularism that marred the close of the century, which al-Rāwandī so eloquently deplored.

The ascription of these wares to the eleventh and early twelfth centuries, which Miss Day contests, is supported by the similarity of the complex palmette and fleurons of the monumental style to dated and datable stucco ornament of the second half of the eleventh or early

twelfth century. For example, to cite a monument to which Miss Day herself has referred (p. 103), the palmettes bordering the flanking mihrabs in Room No. 2 in the mosque at Bālis, which is dated 464 H. (1071–72 A.D.) and 469 H. (1076–77 A.D.), are quite close to the palmettes on the Brangwyn cavalier plate and other examples of the class.

The monumental luster style is not from Kashan, as Miss Day suggests (p. 43). To say, as she does (p. 38), that the large single figure of a horseman is a composition unknown in Rayy luster, is a perfect example of question begging, for these single-figure pieces with blue backs are from Rayy and nowhere else. The potting is characteristic of Rayy and quite unlike that of Kashan, and the writer has discovered no trace of any of the monumental style being excavated at Kashan, while among all his luster shards from Kashan—to say nothing of the hundreds that he has examined on the spot—there has been no evidence of the style, while Rayy has produced innumerable shards of the type and all the vessels that can be traced. Neither the attribution to Rayy nor the dating was "subjective," as Miss Day claims, with her too-ready epithet (pp. 37–38).

Miss Day's objection to the writer's saying that Kashan faïence revetments were exported all over the Near East (p. 42) is another instance of her tendency to misconstrue a simple and incontrovertible statement. This now universally accepted fact is by no means compromised by the lustered waster in Kashan style found in Nishapur, which did come to the writer's attention too late to be included in the text. That Kashan was supplying much of the Near East by no means implies, as she assumes, that the style was made *only* in Kashan; and when she suggests, as if it were a new idea, that "perhaps the potters traveled and taught their craft in other centers" (p. 43), she seems to have forgotten that the writer discussed migration of Kashan potters to Sāva, the Sultanabad region and Tabriz (*Survey,* pp. 1626, 1632, 1640).[22] But that Kashan was the dominant productive ceramic center of the time is shown, if further proof were wanted, by the proportion of Kashan wasters in the author's collection, eighty-eight from Kashan and a scant dozen from all other sites combined.

The genealogy of Kashan potters which the author proposed (*Survey,* p. 1666), Miss Day criticizes from an American, not a Persian point of view: "In the Orient, where a man may have been an apprentice from boyhood in the shop of his family, it is surely not necessary to allow more than twenty years between working generations" (p. 41). She then points out "the danger of making assumptions which lack objective support," a warning that applies perfectly to her own statement. For in Persia it is necessary to allow more than twenty years between working generations. In the first place, there is often a very great gap between the generations. A son was born to Farmān Farmā when he was eighty-two years old. If both had been master potters there could have been a hundred years between their signatures. Moreover, while it is true that boys work in the family shop, it certainly is not true that they sign work as master potters even as young men. The writer has known a number of Persian potters who were accorded the rank of master (*ustād*). The youngest was about forty-five years old.

[22] Again, this principle was clearly announced in the writer's Leningrad communication: "There is ample testimony to the fact that artists and craftsmen migrated a great deal in Iran, seeking prosperity and employment in new places; and just as Kashan exported her pottery all over the Islamic world, so too she must in some degree have exported the potters themselves. Thus the personnel of the factories in the Sultanabad region and of the smaller shops in Sultaniya, both new and very rich centres in the fourteenth century, could only have been recruited from the older factories. This theory, moreover, is definitely confirmed by stylistic considerations." Pope, *op. cit.,* p. 172.

Miss Day thinks that we do not even know whether the ancestors and descendants of famous potters were themselves potters. No, we have no mathematical proof, but if we wait for mathematical proofs in the field of cultural history, we shall never get anywhere. In Persia, as much as and possibly more than in other Oriental countries, the craft is inherited. One family remains in the same art or profession for generations or centuries. For the first son to have broken away from an established and honorable business would, until recently and in a few places, have been scandalous and impious. Moreover, style changes are gradual in the conservative East and an unknown father would have had a style resembling that of a known son, which she seems to doubt (p. 39), although this is a well-established principle even for the less traditional arts of medieval Europe.

Her complaint that the writer has made no acknowledgment of early steps taken by other scholars towards the identification of the Kashan style is misleading. She quotes Herzfeld as having said in 1911: "Die spätere Art der vielfarbigen glasierten Ziegel und Fliesen wird nach dem Orte ihre hauptsächlichen Fabrikation, Kāshān in Nordwestpersien, *Kāshānī* oder *Kāshī* genannt" (p. 40). This properly describes either mosaic faïence or the *haft rangī* tiles, neither of which can be thus ascribed to Kashan, and both of which are irrelevant to the point in question, while the location of Kashan in northwestern Persia compromises the whole statement. Or again, Dimand's comment on the leafy scrolls on the Macy jug (really willow sprays), a feature which every dealer and collector has long known and admired, contributed nothing to the Kashan argument. Dimand did separate two stylistic groups among the Persian luster wares, as the writer acknowledged, but in attributing one to Rayy and the other to Varāmīn, quite without evidence, he was making a distinction without much difference (Varāmīn was a suburb of Rayy); besides, none of these wares were made there.

The principal reason for contesting Miss Day's theory of the stages in the development of the Kashan attribution is not merely to show that these passages do not represent stages at all, but rather to hinder their mistaken citation from re-establishing the conventional literary or library approach to a problem which actually was solved by a realistic, unconventional, and much frowned-on method, namely, the systematic questioning of Persian diggers and dealers. This was the real starting point of the Kashan identification.

The British Museum bowl (*Survey,* Pl. 775B) is, as Miss Day points out, Syrian and hence out of place. It was included by accident (it was easy for the photograph to get filed with Sultanabad pieces whose scheme it superficially resembles), and was brought out too hurriedly in order to complete a plate. The error was discovered in 1934, and then forgotten before it was corrected. It was one of those slips which seem so unnecessary to the critic, but dog most editors.

That the unglazed wares "are dealt with in the most cursory fashion," as Miss Day says (p. 45) is true—certainly as regards date and provenance. The author can only plead ignorance. He stated all he knew in the text. No one at the time had said as much. Unglazed pottery of artistic quality is not very common in Persia; out of about 1500 or 2,000 shards in the author's collection, there are only half a dozen examples. "If," writes Miss Day, "Persia is like other countries in the Near East, unglazed fragments must be strewn over every ruined site and tell." Well, Persia is not like other countries of the Near East, as the author (contra Miss Day) has urged, and not one in ten thousand of the surface shards on the main sites is unglazed except, of course, for an occasional run of coarse kitchen wares or other

crudely executed utility vessels. Far more unglazed shards would be found in Khuzistan or along the terrible southern coast, which the writer has not visited, than on the plateau, where most of the artistic pottery was produced.

Safawid Wares

Miss Day complains of the order followed in the discussion of Safawid wares, insisting that the only reasonable sequence is either by "time or space" (p. 48)—a good illustration of subservience to a formula. Did she or anyone else really have any difficulty in following the author's exposition? There are many kinds of sequence besides the elementary ones of time or space, and the acceptance of rigid proscriptions in such matters could easily lead to unnecessary and unprofitable limitations. Why might one not start with the largest class of wares of the period, or the artistically finest, or those most characteristic—three legitimate approaches? Again she objects to a classification that is partly by provenance and partly by types. True consistency is indeed a jewel but quite as often a hobgoblin; and not to assign wares to their places of origin just because the provenances of others of the period, such as celadon, are unknown would justify the rest of Emerson's remark.

As a matter of fact, the author did start with the earliest wares—the imitation of Ming blue and white—and neither he nor the majority of those interested in Persian ceramics needed to await the discovery of dated pieces, as Miss Day assumes, to know that the type was well under way in the fifteenth century. In fact, the writer suggested a fifteenth-century dating for three pieces (*Survey,* Pl. 782B, 783A, B). Thence he proceeded next to discuss the contemporary blue-green "Kūbachī" wares. He did not "turn back to the fifteenth century" as she says (p. 38). But one could not, without violation of all normal expectations, deal with the black, green, and blue "Kūbachī" wares,[23] without discussing the "Kūbachī" polychrome figural type of which Sāva was apparently the center. This was the more reasonable as it and its affiliated wares were not only, as it now seems, the largest class, but also the most characteristic of the seventeenth century. The other classes followed in the order of their importance.

While of no great account, it is a little annoying to have Miss Day say (p. 47) that "the author followed Hobson in his analysis of the so-called Gombroon ware." The author's account follows Hobson in no particulars and differs from Hobson in many. Miss Day's misunderstanding is probably based on the writer's footnote which credited Hobson with the first adequate published statement about this ware. The author's obligations in this case are to the late Cerof Filippo who, more than twenty years ago, gave the writer the benefit of his investigations of this problem in Persia.

Finally, to examine some general criticisms: although the writer based his dating on references to dated and datable pieces, on a study of contemporary ornament in the other arts, especially metal, manuscript illumination, and architectural ornament, and was at some pains to discover what he could about the levels at which the various types were found, none the less Miss Day charges that the "dating is subjective" (p. 38). "If subjective reasoning is the only basis for dating, every reader will come to a different conclusion," she writes (p. 38), quite in the spirit of sophistic scepticism popular among many young American students at this time. This statement is exaggerated, ambiguous, and in essence quite untrue: *"Every reader,"* for example! There are thousands of them (in some libraries two copies of the *Survey* are in continuous demand), and the calendar is not

[23] *En passant,* a fruitless search for shards in the Tabriz district has convinced the writer that these wares were not made there, as Dimand suggests.

large enough to provide each reader with a different date. "Subjective reasoning"? The nature of reason as against emotion, association, mere succession of mental states and images is that it aims at, and, when valid, achieves objectivity. Moreover, even without immediate material control (i.e., dated or datable inscription or some technical properties that more or less automatically prescribe the date) serious students do come to approximate agreement on dates with surprising ease and considerable unanimity.

These remarks are not meant as a cover-all defense of the writer's dating. Some attributions had to be made too quickly, and a more liberal use of question marks would have been advisable. Indeed, the writer gladly accepts the convincing corrections of a number of his dates, and others are properly queried, with valuable suggestions; only the reviewer does not state that, in proportion to the number of pieces discussed, the number queried is small, scarcely 2 per cent. One serious error, the suggested tenth-century date for the Chicago tazza, is duly corrected (pp. 57–58), and the piece is placed where it belongs: 835 H. (1432 A.D.). Miss Day's alert suggestion that the piece really was from Ashraf is correct.

In a number of other cases the datings suggested by Miss Day ought, in the writer's opinion, to be studied further. A full discussion of these difficult and often elusive problems, however, would drive this already too long review to an interminable length.

On the other hand, to ignore all the long list of minor objections that Miss Day raises might look like a plea of *nolo contendere*, and to acquiesce in many of these criticisms would be to assent to unfair judgments and to some real mistakes on her part. Yet to argue them in full would be too tiresome, hence some examples must suffice.

Concerning the map of ceramic centers, she asks (p. 47): "Since Samarra and Baghdad are included, why not Kufa and Basra?" Kufa and Basra were obviously not centers of Persian ceramic production, nor is there any reason to think that they made significant contributions to it. Samarra and Baghdad, on the contrary, besides being orientation points—inseparable from any discussion of Persian pottery—were in constant productive relations, artistic and commercial, with Persian producing centers. The omission of Susa is a regrettable accident, but it is shown on the general map, as is Aghkand, which could not be satisfactorily located at the time the ceramic map plate was made. Miss Day objects that there is no indication of Bīdjār. None was necessary. There is no evidence that Bīdjār was itself a producing center, and it was not needed as an "orientation point for the Garrūs district" (p. 47) since the Garrūs district is clearly marked and lettered at the right place on the map. Other sites might have been included, but the writer was emphasizing centers, not the provincial towns where pottery was made for local consumption, and it might have given a wrong idea of the geographical distribution of the art to have entered all the places which Sir Aurel Stein's thorough research revealed on the south coast, since many other as yet unexplored areas on the plateau might yield similar finds. It was for such reasons that the writer left out Nehavend, from which he acquired a waster (poor quality green, blue-black, painted jug, late thirteenth or fourteenth century), and Gulpaigan, where it seems probable that pottery of fair quality was made.

At various points the reviewer has delivered judgments that are not in accord with the facts and are not substantiated by argument; for example, in the discussion of transliterations (p. 15) she says: "The spelling of some other words is evidently editorial policy." The transliteration system was devised by the late Sir Denison Ross (p. xix) and carried out entirely by Sir Denison, Ettinghausen, and Minovi—all highly competent. The writer is not entitled to any

opinion on the points raised by Miss Day, although, when she complains that the usages she quotes "come as a distinct shock to the reader familiar with Arabic," her agitation sounds a little forced, in view of the eminence of the scholars she was criticizing.

Miss Day is not always impeccable in her own spelling. Following Hobson, she speaks of Yasukand. But there is no such word and no such place. True, the word is used under the plates, but it is corrected in the text which, as she recognizes, has the last word. The plates were begun in 1931, and it was 1938 before the writer had a chance to visit the region in question and determine the proper spelling. But why did she continue to use the wrong spelling? Should not an expert in language have seen that the word means nothing? The actual word Yastkand is Mongol—Yast meaning council, and Kand meaning town—Yastkand: the town where the council was held. The error Yasukand was perpetrated by the eccentric Rowland Reed and given currency through the authority of Hobson.[24]

There are a number of curious naivetés in Miss Day's review which comport a little oddly with her genuine learning. She thinks it is strange that the writer does not follow exactly Ettinghausen's dated list inasmuch as he had been selected to do the work. This is a peculiar theory of editorial responsibility. She herself has disagreed with Ettinghausen at a number of points, but denies that privilege to the editor. While the editor feels that Ettinghausen was clearly the ablest scholar anywhere for that particular task, it does not follow that the editor was thereby excused from exercising his own judgment and conscience. He does not agree, for example, with Ettinghausen in his doubts about the three dated bowls from Sāva on the ground that the dates are painted over the glaze. So they are, but this is perfectly normal, and holds equally for the Raphael bowl (*Survey,* Pl. 688 A, B), which was found with the others, yet has been published without question by Ettinghausen. In the writer's possession are shards from Sāva of the same type with black inscriptions similarly painted over the glaze. Moreover, restored pieces that are painted over the glaze yield quickly to alcohol sponging or to a little scraping—a test which, as the writer's footnote states, was fully met by the three pieces in question.

Speaking of the "Gombroon" ware, Miss Day says it "is one of the closest imitations of Chinese porcelain, *yet* (italics mine) of one plain white bowl (Pl. 811C) the author said that 'it perfectly expresses Sufi sentiments.'" Why not? It is a commonplace that the religious feelings of one region have thus found their most adequate expression in the art, poetry, ritual, or experience of other peoples, and many sophisticated Americans have testified that it was the Persian, Omar, who most perfectly spoke their deepest convictions.

A commonplace statement about the habits of Oriental rulers, which is true of every period for two thousand years in the Near East, she says (p. 19), without any justification or truth, "was taken second-hand from an article by Koechlin." Should anyone who said that Detroit was the center of the automobile industry be accused of plagiarism?

She objects to a reference to Creswell's *Early Muslim Architecture* (p. 12), apparently on the ground that it is a secondary source. It happens that Creswell there made one of the clearest and ablest statements of an important truth, and any serious student ought to be interested in expanding the writer's account by reference to such an admirable exposition.

[24] Miss Day finds unsatisfactory the reading of a number of the inscriptions. The writer, not being an epigraphist, is entitled to no opinion, and those who read them for him are not at the moment available; but in a note in some subsequent issue of *Ars Islamica,* these criticisms will be considered by those who are responsible for the translations.

Might not Miss Day also have objected if the reference to Creswell had been omitted? She often does object to the writer's failure to note unimportant or scarcely relevant remarks in various publications, some of them subsequent to the printing of the chapter in question.

The addiction of Miss Day to the library point of view is shown by her objection that the writer gave no reference for the finding of kaolin at Rayy and Kashan (p. 32). There is no literary reference, to the writer's knowledge, except his own *Introduction to Persian Art* (p. 95), in which the finding of kaolin at Rayy is reported. As for Kashan, the statement is also the writer's own, based on conversations with potters there.

Miss Day asks many somewhat petulant rhetorical questions to which she could have found the answers. "What significance," she demands (p. 44), "for the history of ceramics was Ibn Ḥawḳal's praise of the camels and camel drivers (*Survey*, p. 1626) of Sāva?" Had she read the next sentence she would have found the answer: "This implies that either the ceramic wares were not considered particularly fine or that they were not exported in any bulk." Ibn Ḥawḳal and the other medieval geographers had a habit of mentioning the export products of the cities they visited, when they were of importance, and that he confined his remarks to such a homely subject does have significance.

Miss Day asserts that the bowl in the writer's collection which carries the name "'Amr" repeated three times could very easily have been shown in a drawing or photograph (p. 19). How does she know? Similarly, she (same page) protests: "If Mr. Raphael allowed the mention of this bowl (a signed Yastkand piece) why not an illustration as well?" There could be a dozen reasons why one and not the other could be included—reasons which she ought to canvass before complaining, especially as the illustrations to the ceramic chapter give ample proof of the writer's exceptional efforts to illustrate documented material. Again, she complains that photographs of the tiles in the sanctuary at Meshed were not included. They were acquired just two years too late.

If Miss Day thinks it worth while to call attention to the fact that the "Khātim bowl" from the Louvre (*Survey*, Pl. 576) is shown on its side (as it is, owing to a slip in the composing room), which practically every reader of the *Survey* will promptly see for himself, might not space have been found for some word of acknowledgment of the author's penetration into the sanctuary of Meshed and the photographing of important discoveries there, something no Westerner had ever been able to do? Or does she feel that the misplacement of the "Khātim bowl" is more important?

There are unfair statements in Miss Day's review. For instance, the writer's efforts to identify Nishapur pottery are casually disposed of: "For 'Nishapur' a few pieces in museums are suggested, for the reason that they were said to have been found there, or because a pattern is quite independent of anything found from Rayy or Kashan" (p. 44). A reader might reasonably conclude from this that the Nishapur attributions were merely guesswork and untrustworthy; but as a matter of fact, they were based on work begun in 1934, involving several trips to Nishapur, interminable interviews, and the sifting of much evidence.

More serious than the effort to accumulate the largest possible number of objections, specific errors, or deficiencies is the accusation, several times repeated, of bias and preconception, for example: "There is too much evidence of wishful thinking in the assigning of various types of specific centers (p. 48)" and "in the early period . . . . he handled the material so as to prove a preconceived theory." Again: "He didn't ask questions, he made assumptions (p. 17)." These are very serious charges. For a young student to accuse, without evidence, an older scholar of violation of the most elementary

canons of scientific method somewhat transgresses the amenities. What Miss Day apparently means is that she personally doesn't agree with the views in question.

No one wholly escapes the influence of preconceptions, or what Miss Day calls, in the popular cliché, "wishful thinking," but a certain presumption, at least, exists in favor of the trained philosopher, for it is his business (and it is not a thing that can be learned quickly) to analyze and control the hidden motives and assumptions—both ideational and emotional—that underlie and animate thinking and affect conclusions.

The identification of hidden motives is no easy task, even for skilled psychologists working over a range of varied evidence, yet Miss Day, who seems to be almost self-righteously scientific, is categorical in her accusations. What assignments to what specific centers are the product of what preconceptions she does not say. As a matter of fact, when the writer began a serious study of Persian Islamic ceramics in 1925 he did improperly assume that the early luster, the early ruby luster, and the blue painted white ware were all made in Mesopotamia, as Kühnel had so vigorously urged, and the assignment of them to Persia was subsequently forced upon him by sheer weight of evidence. Nor has the writer any hidden prejudice in favor of Amul, Sārī, or Garrūs, or any town or site rather than any other. As to the curious charge (p. 14) that the author has failed to treat the development of Persian ceramics in a proper historical fashion, the text itself is again the answer.

In short, Miss Day has by no means given a "full evaluation" of the ceramics chapter, nor does she give a "person not a specialist" in the "particular field a definite insight into how much he could rely on the article" (Ettinghausen's instructions to the reviewers—p. 1). Only an expert with firsthand knowledge of the huge material involved could gauge from her review how dependable the chapter really is, or the place that it takes in the literature of the subject.

The review has important merits. The writer recalls none that reveals more hard work, except Erdmann's study on the carpet chapter in the same number of *Ars Islamica* (pp. 109–91). New information has been brought out and minor errors have been corrected. The writer has only welcome for properly substantiated corrections, and errors, as well as spades, should be called by their right names. A frank and factual review, no matter how blunt, is vastly preferable to reviewing by innuendo, or to fatuous praise in the hope of favors to be returned, or to "political" reviews, or to those dreary summaries, with their tiresome iteration "the author then says." Even Miss Day's ivory tower mandates, unreasonable as they sometimes are in the context, have a value, for they help form the program for the next advance.

But her complete disregard of ceramics as an art, which was the main concern of the chapter, as it was of the Persian potter himself and of his patron, prevents the review from being more than a partial estimate, at best, while her uncritical acceptance of certain assumptions about method reduces a number of her judgments to limited validity.

On the larger issues of fact—the opposition to Persia's cultural independence of Islam as a whole, the denial of the productive role of Chinese ceramics, the effort to re-establish a Mesopotamian provenance for the early Islamic blue and white and luster wares, the attempt to open up again the too mysterious gap between the early and late luster styles— Miss Day is far from succeeding, and the writer has found no reason to change his mind on any of these points.

Moreover, there are several ethical qualifications which Miss Day never mentions or even implies in her critique. She does name two principles: objectivity and soberness, which if spe-

cially defined might be called ethical. One—soberness—she brings up so often and with such *empressement* that it almost seems as if she had a suppressed fear of intellectual inebriety, which is certainly not one of the major threats to American art scholarship at the present moment.

Objectivity is almost equally extolled, and subjectivity Miss Day sees as the one deadly sin; and so it is, if properly understood; but apparently for her subjectivity means emotion, while objectivity is not merely freedom from emotion but, as she understands it, is a correlate of materiality. She thinks it possible to treat art as if emotion were foreign to it, as if beauty itself were merely subjective and therefore not a topic appropriate for rigorous analysis or rational interpretation. The whole problem of values apparently does not exist for her.

Real subjectivity shows itself in bias, egotism, vanity, jealousy, personal ambition, fear, malice, and all those sundry emotional intrusions that sever the cohesion of thinking or divert it toward other goals than the truth; that interrupt or modify even the simple acts of visual perception; that weight every intellectual process with irrelevant or disturbing feelings.

Protection from such interference and distortion is to be found, not in the impoverishment of experience or a panicky resort to the mechanical categories, but rather in absolute and unqualified sincerity, both conscious and unconscious, an ideal never wholly attained by anyone, but approached when one really prefers the truth to every other value or advantage, without regard to cost. Rigorous self-discipline, of course, must supplement such a dedication, unless it is to remain ineffective sentimentality; and finally the development of understanding and skill in the use of value judgments, or the teleological categories, as they are professionally called, will provide the techniques for the needed synthesis and interpretation.

For the highest kind of scholarship still more must be required, qualities which are indispensable to the most significant achievement, qualities of which we hear nothing from Miss Day: courage, enterprise, creative imagination, strong feeling, a stout realism. Equally important is independence—independence of precepts, of colleagues, of the literature, of approval, of chance for advancement, or mental or material security, whenever such independence is called for, and that is often. Some of these qualities animate the chapter on ceramics. That she either senses none of them, or perhaps disapproved of them all, is a serious deficiency of her long review.

Dated Faïence

Miss Day's review of the dated faïence is acute, learned, and penetrating, and many valuable and interesting facts are brought to light. An authoritative estimate of her critique, however, is clearly a task for Ettinghausen. A few comments from the editor may be permissible.

The writer holds with Ettinghausen that the Rayy luster type with its loose and sketchy designs must have been introduced several decades earlier than the few dated pieces now known, even though there are no dated examples to prove it. The swift, expressive stroke is the end result, not the beginning, of representative painting. Whoever decorated the earliest dated Rayy luster (the jar in the British Museum, *Survey,* Pl. 636B) had been at the work a long time, and he had forerunners, too. It does not necessarily follow from this, however, that the pottery type was as old as the painting style, for this may conceivably have developed in other media, although the long previous history of pictorial ceramic decoration makes this highly improbable.

It would have been better, as Miss Day suggests, if the dated list had been simply chronological instead of by subdivisions which, in actual use, force a certain amount of hunting and make it none too easy to follow closely the development of the styles. Moreover, it is clear, as the writer has emphasized, that one decorator was likely to be employed on the ornamentation

of a variety of wares. But she overlooks the serious problem that the editors faced in trying to mitigate the effort and inconvenience that threatened the reader because of the unprecedented abundance of the material presented. Each writer was left free to choose his own scheme. It was not an easy question, and there are still arguments for the group presentation.

Miss Day makes no acknowledgment of the furious efforts of the editors to keep the *Survey,* which had been so long in preparation, up to date by eleventh-hour additions. "If," she asks, (p. 52), "the editor could insert in his Addenda to the Dated List objects published in 1938, why not include others published in 1937?" The editors took only the liberty of including in the Addenda material referred to at the very last minute, incorporating those items which had come to their attention just before that section went to final print, when it was too late to consult Ettinghausen. As long as addenda could be made to the general list the responsibility was felt to be Ettinghausen's. Moreover, that Madame Godard announced seven new dated inscriptions in *Athār-é Īrān,* which is dated 1937, does not mean that either Ettinghausen or the writer had received that number at the time. Very frequently the dates borne by scholarly, as contrasted with commercial periodicals, represent, not the time of issuance, but a form of serial numbering.

Miss Day credits Aga-Oglu, Donaldson, Madame Kratchkovskaya, Bahrami, and Madame Godard with having made contributions to the list of dated faïence (p. 49). The writer, who has added more than any of those mentioned, is mildly curious to know why he was not included in the list, particularly as he knows of no dated piece that was discovered by one of those mentioned.

Ceramic Technique

Matson's reviews of ceramic techniques are learned, informing, and written in the best of spirit and are the ablest statements on the subject that have come to the writer's attention. This is the kind of reviewing that is most valuable. It might be said in behalf of Mr. Bazl, who wrote the chapter on "Contemporary Techniques," that he was a young Persian student living in Isfahan and that, when he wrote the article, he had never seen a publication of any kind on the subject.

Arabic Paleography

Miss Abbott has contributed an article on Arabic paleography that is prodigiously learned and that impresses the writer, a complete amateur in this particular field, as adding important information on the subject. Although only a relatively small proportion of the article is devoted to the review of the *Survey* discussions, it is written in good spirit and with a sensitive appreciation of some of the values the editors had in mind. It is particularly gratifying to have her notice "the uniformity of style" that was achieved "despite the handicap of multiple authorship." Her awareness of the editors' eagerness to see that credit was given to those to whom it was due was most welcome, because there have been editors and authors guilty of shocking plundering of the ideas of others and half-concealment of the credit due them.

The highly technical problems she raises about the *Survey* chapter must be answered by Minovi. Perhaps Miss Abbott does not give quite enough attention to the artistic significance of the scripts, the expressive character of each, and their formative influence on all the decorative arts. And did not Bazl's superb drawings and reconstructions of some of the great inscriptions deserve just a word of commendation?

Textiles

Kühnel's review, which devotes a scant twelve pages to the five chapters on textiles (275 *Survey* pages, some 175,000 closely packed words, with 165 text illustrations and 131 plates —31 in color—the plates alone showing 222 different pieces) is meager and disappointing.

Kühnel has not even read the text with care at a number of points and is guilty of some serious misunderstandings. Much of his review consists of mere summaries—so brief as to be of little use. With this he combines occasional comments that show a general negative and dogmatic reaction to the new attributions and interpretations, which are the product of creative insight and a disciplined imagination, and are based on a remarkable range of detailed research.

Dr. Ackerman has written the first history of Sasanian textiles, displacing all previous speculations by technical and documentary studies, and has supplemented these by painstaking comparisons with the monuments and by a complete survey of all the related types (which the *Survey* text could not include), in its entirety covering some thousands of specimens, both technically and stylistically analyzed.

Kühnel might have suggested for the group assigned tentatively to Transoxiana (*Survey*, pp. 704–5) an Asia Minor provenance which can be supported with interesting evidence, technical and stylistic. He could say only "einige Berliner Rosettmuster werden auf Transoxiana localisiert" (p. 109).

If he had read the *Survey* carefully he might have hesitated to criticize Dr. Ackerman for not placing more emphasis on the dating of the Sasanian textiles within the four hundred-year period; for as a matter of fact, she has discussed the problem for the only three of the seven classes on which there is any evidence worth mentioning; and on pages 759 to 761 Kühnel will find a statement on the unwisdom of attempting dating for most Sasanian objects in the present unsatisfactory state of our knowledge.

Kühnel's expression of regret (p. 110) that Lamm's publication, *Cotton in Mediaeval Textiles,* appeared too late for Dr. Ackerman to take it into account, reveals that he is not *au courant* with the literature in this field. Dr. Ackerman's review of this book in the *Iranian Institute Bulletin* (V [1938], 272–73) shows it to be of dubious value. In considering Dr. Ackerman's summary of literary information on the early Islamic and Seljuk periods, based on a great range of research, Kühnel protests that she has not given recognition to Wiet's published excerpts on textiles from Arabic sources, though she has used some of the same citations. Kühnel has not read Dr. Ackerman's footnotes, for there she has been at pains to explain (p. 1996, n. 3) that all her citations have been repeatedly published previously and, obviously, to list all these references would merely burden the notes and contribute nothing. Dr. Ackerman thoroughly examined this and scores of other publications, but found that practically all the relevant material had long been in her own documentary file.

One reason for Kühnel's failure to appreciate how great an advance Dr. Ackerman's work has achieved is his exaggerated notion of the value of von Falke's work. This, he urges (pp. 110, 111, 113), should have been taken into account at various places. For instance, he states that Dr. Ackerman should have digressed to consider von Falke's attribution to eastern Iran of the well-known group of early Islamic silks with confronted animal patterns, like the Nancy lion panel. But these are certainly not Iranian, and full evidence for their correct attribution will be given in her forthcoming publication on Asiatic textiles.

Von Falke's work, which was first published nearly forty years ago and then appeared many years later in a "new" edition that showed a woeful lack of realization of his own errors, did originally serve a useful purpose in increasing interest in the art of textiles and providing students with a large number of readily available illustrations of examples in European—mostly German—collections. But his discussions of Asiatic textiles have little merit. The attributions, frequently quite random, are, as a rule, without benefit of evidence; and various

classes obviously stylistically as well as technically constituting a single type, are scattered through a variety of differently identified groups.

Kühnel actually writes: "Falke's Attributionen . . . sind nie unbegründet and müssen daher ernsthaft diskutiert werden" (p. 113). The sentence could better read, as far as early western Asiatic textiles are concerned, "sind nie begründet." As it stands, it furnishes an excellent example of myth making in German art scholarship.

In criticizing Dr. Ackerman's interpretation of "mulḥam" and preferring Lamm's (p. 111), Kühnel is almost certainly right. His remark (p. 112) "ein Schriftstoff in Washington, dessen Epigraphik den Einfluss eines abbasidischen Ṭirāz verrät" is interesting and, if so, important; but he does not give any identification or reference for the Abbasid ṭirāz in question. He might have questioned—and probably correctly—Dr. Ackerman's attribution of the Cleveland double cloth (*Survey,* p. 2021) to Persia.

Kühnel (p. 113) finds disturbing Dr. Ackerman's recognition of the fact that there is no basis for assuming in the Mongol period that one city or even one shop always used the same quality of "metal" thread, because that would deprive art historians of technical evidence. Alas for the art historians, the weavers were not aiming to supply them with evidence six hundred years later, but were working under actual practical economic conditions.

Kühnel seems not to have been very realistic when he comments (pp. 110–11) that the division of the material among the various periods is uneven, a great predominance being given to the Safawid time, for the amount of material surviving from that time is many times as great as that from all the previous epochs combined. His somewhat earlier dating (p. 115) for the Moore collection prisoner damask, i.e., the middle, instead of the third quarter, of the sixteenth century, is probably correct, but in dogmatically denying, without giving any reason, that the piece is from Khurasan, it seems that he has not followed the technical evidence, nor taken account of additional evidence given elsewhere (*Survey,* p. 2146).

Kühnel's strictures (p. 116–17) on Dr. Ackerman's tentative attributions to Riza-i-Abbasi (Riḍā 'Abbāsī) of several textiles, including the beautiful rose ground compound cloth of which the Detroit Institute of Arts has just acquired the specimen from the Holmes collection, will impress his colleagues less because his own theories concerning Riza (*Survey,* pp. 1884–92) are not fully accepted.

Kühnel states that Dr. Ackerman assumes that all the Seljuk silks tentatively assigned by her to Kashan were made for Zoroastrians (p. 112). But this is suggested (*Survey,* p. 2013) for only one of the nineteen pieces in the group. Indeed, he has apparently not read all the text, for he says (p. 111), "sie übergeht vollständig das ganze Problem der iranischen Ṭirāzorganisation . . . ." Dr. Ackerman expressly states (*Survey,* p. 2002), "the fragments thus documented . . . . [are] of no value for the history of the decorative arts."

Again, discussing the Sasanian section, he objects that Dr. Ackerman has omitted, without a word, the *Reiterstoffe* though he too concedes that they are not Sasanian; but Dr. Ackerman did discuss the question, and for the first time adequately (*Survey,* pp. 700–701); and in protesting in this connection that Dr. Ackerman should have taken into account the distribution of the Iranian silk style westward, Kühnel shows he quite overlooked the program of the *Survey,* so often discussed with him by the editors, for that included the issuance of a second section to cover just these questions of distribution and the various other types of external relations.

Even the illustrations Kühnel does not always seem to have noted, for in reference to the wool fabric with eagles in Dumbarton Oaks, he writes: "Leider ohne auf die Muster ein-

zugehen" (p. 110). But the piece is illustrated on the opposite page, and Dr. Ackerman devotes 250 words (*Survey,* p. 706) to as detailed a discussion of the pattern as it could possibly warrant, supplemented by three cross references.

The carelessness of his work is again evident in the misstatement (p. 116): "Dr. Ackerman vertritt die Meinung, dass seit etwa 1585 keine Kartons mehr an die Textilbetriebe geliefert wurden." Dr. Ackerman (*Survey,* p. 2094) actually suggests this only for the Yezd shops. He also attributes to Dr. Ackerman the statement that the London-Chicago (he should have added Cleveland) velvet is in the "besten Shah Abbas-Stil . . ." But what Dr. Ackerman actually says (p. 2105) is that it epitomizes the spirit of Shah Abbas' court, which is very different, and she also notes the "aroma of degeneracy."

When Kühnel (p. 112) finds the attribution of the apple-tree silk to Shushtar "schwer verständlich," he is in effect admitting his inability to follow technical evidence, a primary requisite for estimating Dr. Ackerman's entire treatise.

At two other points Kühnel is so seriously at fault that these must be given more extended consideration. Concerning the green Parish-Watson satin with the inscription carrying the date 979 H. (1571 A.D.), he writes: "Die angeblich abgetrennt gewesene Inschrift auf besonderem, oberem Schild, deren unbedingte Zugehörigkeit noch nachzuprüfen wäre. . . . ." Did Kühnel not read (*Survey,* p. 2140, n. 1) Dr. Ackerman's statement that when she first studied the piece, in 1929, it was intact and the inscription was then translated? If he overlooked this note he had no right to comment on the piece. Or is he questioning Dr. Ackerman's veracity? The piece in its whole and original condition was, as a matter of fact, in the possession of the editors for nearly a week in Paris, in January, 1929.

Evidently, he was reading too superficially to follow Dr. Ackerman's careful discussion, for below (pp. 117–18) he says: "Besagt doch aber die Inschrift nicht im geringsten, dass es sich um ein Erzeugnis von Mashhad handelt." What Dr. Ackerman says (*Survey,* p. 2142) is quite different: "There is satisfactory evidence that the 'Holy Place' referred to was the Shrine of Mashhad." Actually, careful inquiries in Persia had revealed that the piece had come out of the Shrine of Imam Riḍā, probably in 1926—a year in which several important pieces disappeared from the treasury of the shrine in anticipation, so it was rumored, of the government's plan for a more accurate inventory and more stringent control, which had been urged by the writer in 1925. Kühnel asserts without any evidence, that the piece is "zweifelhaft." Such random doubts are not compatible with scholarly responsibility.

Equally irresponsible is the statement about the hunting tapestry in the collection of Mrs. William H. Moore (p. 118): "Die ganz in Miniaturstil gehaltene Jagdszene [Wirkerei] bei Mrs. Moore, die auf der Londoner Ausstellung 1931 Aufsehen und einige Zweifel an ihrer Echtheit aufkommen liess, *die aber bisher niemals klar formuliert und begründet wurden*" [italics mine].

Kühnel's concluding statement that the doubts have never been clearly formulated, implying that the matter is an open question is decidely questionable. Kühnel himself formulated them as clearly as he could in a study group of about twenty people standing before the tapestry in the Hermitage Museum in 1935, and at the end of more than a half hour of discussion, which became general in the group, he fully and freely admitted that he had no argument against it. He then heard Dr. Ackerman read a paper before the Third International Congress on Iranian Art and Archaeology in which she put succinctly and specifically all the arguments that had ever been cited, refuted each and every one with the tapestry on the stage beside her, and then asked for criticisms or comments. There was no reply from any of the hundred or more scholars present, save for expressions of appreciation and assent from Strzy-

gowski and from Sarre. Moreover, this paper has been available in print now for three years[25] and remains unchallenged.

Sasanian and Islamic Metalwork

Dimand offers many interesting detailed comments on the articles on Sasanian and Islamic metal, a field in which he is the most experienced scholar in America. His specific criticisms of the Islamic section ought to be appraised by Harari, but, at this moment, he is very busy on the North African front, while Orbeli, who would no doubt have much to say about the problems Dimand poses in his critique of the chapter on Sasanian metal, is heavily occupied in beleagured Leningrad.

Yet one ought not to delay acknowledgment of the soundness of some of Dimand's criticisms and the value of his positive contribution, particularly to various aspects of the Sasanian problem. He is right in complaining of the eccentric order of the illustrations, which was the consequence of a special theory of Orbeli's at the time the plates were being printed, but was relinquished before the text was finished. Dimand does not, on the other hand, express any opinion of the alternative order proposed by Dr. Ackerman, which constitutes a serious if tentative theory of classification and sequence.

Dimand feels that more emphasis should have been given to artistic interpretation and development (p. 192). But a detailed discussion of the artistic development of Sasanian metal styles is hardly possible until a dependable chronology replaces the chaos and ambiguity of present dating, which as Dimand himself shows is still a matter of heated controversy with no real consensus yet emerging. And, if Dimand thinks that artistic values are primary, why did he ignore the thoughtful aesthetic interpretations which Orbeli and Dr. Ackerman did provide? Similarly, Dimand would have liked more discussion of techniques, despite the fact, which he does not acknowledge, that the chapter contains far more technical information than any previous publication on the subject. He also would have liked more plates (p. 198), regardless of the fact that, with the exception of the completely anarchic catalogue of Smirnow, no such complete corpus of material of Sasanian metal has ever before been presented. Apparently, with Dimand as with Miss Day cost is no consideration.

What Dimand fails to mention is that Orbeli's chapter constitutes the first comprehensive history of this important art; an account illumined by much special knowledge and original thinking, which make it the greatest single contribution to the subject that has yet appeared. In fact, one looks in vain throughout Dimand's review for any word of recognition of the vast labor and great cost that went into the preparation of these two chapters, nor is there any word of commendation for the rich addition to our knowledge of the subject that these two authors have contributed.

The controversy between Erdmann and Herzfeld which Dimand recounts very fully, and the penetrating comments that he makes are matters for Orbeli to discuss. Dimand does give an unusually impressive view of the long persistence of Sasanian metal styles deep into the Islamic period and offers some criteria for the dating of these later pieces.

Meanwhile, one cannot ignore several of Dimand's assertions which are too controversial to await a postwar comment from the authors in question. For instance, despite the statements in the Preface and other easily accessible information, he has, even more than Miss Day, quite ignored the method and purpose of the *Survey*. Thus, he complains that the introduction of Dr. Ackerman's material into the chapter on Sasanian metal is "a very unusual procedure and unfair to the author. These editorial sec-

[25] P. Ackerman, "A Sixteenth Century Silk Tapestry," *Mém. III^e Congrès international d'art et d'archéologie iraniens* (Moscow-Leningrad, 1939), pp. 6–11.

tions often overlap from one paragraph to the other, complicating the work of the students wishing to follow the thoughts and arguments of Orbeli. It would have been more appropriate to have added the names of the collaborators, for Orbeli cannot be held responsible for the many unverified statements expressed in the inserts" (p. 192).

That the procedure is unusual is no reason for disparagement. The *Survey* is unusual in all respects, and the lack of progress in the discussion of Sasanian metal in nearly thirty years prior to the appearance of the *Survey* would seem to call for some radical change in procedure. Moreover, far from these inserts being unfair to Orbeli or in any way interrupting his argument with statements for which Orbeli is not responsible, Dr. Ackerman's contributions were all submitted to Orbeli, many were discussed in detail, and all were approved. Indeed, he very generously asked that, in recognition of the value of her contributions, her name be added as joint author—quite a different attitude from Dimand's. As a matter of fact, these contributions fill in specific gaps in Orbeli's exposition, without which it would have been fragmentary and broken. Dr. Ackerman's sections of text cover points on which Orbeli was unclear or, for some reason, lacking the specific information. But all these points were requisite for the completeness and coherence that were the fundamental ideals of the *Survey* from its very inception. If Dimand finds reading Orbeli's exposition, skipping the bracketed sections, unduly fatiguing, it is because without the bracketed sections the exposition is incomplete and interrupted.

Nor is it true, as Dimand complains, that Dr. Ackerman's contributions are unverified assertions. They are careful summaries of fact, or presentations of keen, new observations, or, where they offer novel interpretations, they are as carefully argued as Orbeli's own interpretations—with qualifications where the evidence is not conclusive and careful footnote summaries of alternate opinions where these exist, as any reader can see for himself.

Dr. Ackerman could the more perfectly weld Orbeli's and her own work into an organic whole, because Orbeli dictated to her his entire text in French, and after each of the many sessions in Leningrad in 1935, she organized and edited his material and at the end of her arduous task, submitted it again for his revision, together with the footnotes which she compiled. This immense and valuable work was worthy of the appreciative recognition it has received in other quarters, and it is regrettable that Dimand overlooked what is an important contribution to the problem of Sasanian metal.

Again Dimand has ignored the plan of the *Survey* when he regrets (p. 200) that the gold vessels from Nagy-Szent-Miklos are not illustrated and discussed; for, by his own statement, they are Turkish, not Persian, in origin; and the second section of the *Survey,* planned from the beginning to cover origins, relations, influences, would have given these pieces their due consideration.

In his discussion of the chapter on Islamic metal Dimand unfortunately assumes a condescending manner towards Harari, whom he regards as a "non-professional"; but he admits that "his attempt is worth reading for it gives a fairly good account of the field of Islamic metal work." The only sense in which Harari is a "non-professional" is that he is not paid for any of his work or researches in the field of Islamic metalwork. Harari is not only the greatest collector in modern times of Islamic metalwork, but he probably is the best informed man on the whole subject. Like everyone else, including Dimand, he cannot, and does not, claim to be impeccable; but he has assembled a collection with which no museum in the world can compete, and he is constantly studying it. Moreover, he not only brings to his task a first-class historical education and perfect command

of Arabic, which helps make him one of the best of Arabic epigraphists, but he also knows firsthand the conditions of life and work in the Orient—a very real qualification. He has written the first history of Persian Islamic metalwork. Will Dimand point to some other account of this material that can, in scope, or detail, or fair-mindedness, or sympathetic interpretation, approach the work of Harari? Nor does Dimand mention the fact that Harari has written with admirable grace and lucidity. Such skill in exposition is regrettably rare in contemporary art scholarship.

Dimand is right in feeling that there is insufficient correlation between Harari's chapter and the preceding one by Orbeli. The discrepancies, however regrettable, are slight and no thoughtful reader ought to be baffled by them. The fact was that, with Orbeli in Leningrad and the final confirmation of his chapter being received at almost the last minute, while Harari was in Cairo, it was impossible to provide him with an opportunity for those final adjustments between chapters which were the ideal of the *Survey* and which were in many cases realized.

In the field of Seljuk metal Dimand challenges some of Harari's most important statements. In so doing he adduces arguments and relies on presuppositions which are out of accord with facts. In his discussion of the Alp-Arslan salver in the Boston Museum Dimand says: "The provenance and the history of this piece are obscure" (p. 211). The piece was found in Russia in 1931. When Harari states that it was apparently for generations in a private collection, it is not in order for Dimand to put an exclamation point after the sentence. Harari is a responsible and conservative person. His statement was made with knowledge and is confirmed by Plenderleith's[26] discovery by microphotography of the shadowy imprint, invisible to the unaided eye, of a label, once attached on the back, which seems to have been in Russian, and in any case is old.[27] The former owners said that many years ago the salver had been shown in a small provincial Russian exhibition (probably Samara). It may be possible after the war to verify this. And in any case, why should Dimand be sceptical on this point? Does he not know that a number of the Sasanian metal vessels—five centuries older than the Alp Arslan salver—in the Hermitage Museum, were found in Russian private possession, where they had been in continuous use?

Dimand's approving reference to anonymous commentators, quoted as saying that the "foliage ornament could not foredate the thirteenth or fourteenth century" (p. 211) is a charge that the salver is a falsification, though of what period he does not say. It should not be necessary to point out that anonymous commentators who have not the courage of their convictions are quite without status, and in any case the statement, since it is unaccompanied by reason or evidence, has little claim on serious attention.

Moreover, these anonymities must have been unfamiliar with Seljuk ornament, for the major feature of the foliage on the salver is a lobed fleuron which Miss Day calls, with good reason, "the Seljuk leaf." It is illustrated in Figure 7 of her articles in *Ars Islamica*, from the Seljuk

[26] H. J. Plenderleith, Director of the British Museum Laboratories, made very detailed scientific studies on the antiquity of the salver: H. J. Plenderleith, *Museum Journ.*, No. 8 (1930), 280–84; *idem*, "The Determination of Alleged Metal Antiquities by Scientific Methods," *Mém. III^e Congrès international d'art et d'archéologie iraniens* (Moscow-Leningrad, 1939), pp. 156–60.

[27] "The silver had combined with something in the adhesive on the label (but not where there was any printer's ink) leaving, when the label was removed, a silver salt sensitive to light. The traces had darkened with time only very slightly but it was sufficient to affect a photographic plate." *Ibid.*, p. 158. Plenderleith made out a word something like "Arikexe," and below it are indications of Arabic characters, of which the first seems to be the figure "2"; *ibid.*, Pl. LXIV, second upper right fig.; the illustration has been printed upside down.

house at Bālis, which the excavators dated in the first half of the eleventh, or even the late tenth century, thus antedating the salver.[28] The same leaf is also to be found in panels flanking the main mihrab in Room 1 of the Mosque of Bālis, which carries two dates, 464 H. (1071–72 A.D.) and 469 H. (1076–77 A.D.). This occurrence is especially notable as Salles reported that Bālis was an appanage of an 'Uḳailid of Mosul named Muslim ibn Ḳuraish, a vassal of the Seljuks who had married one of Alp-Arslan's sisters. Furthermore, the same leaf is found in Seljuk Korans of this time. In fact, it is common on the pottery, the metal, and the architectural stucco of the period, as many illustrations in the *Survey* show.

The understanding of Seljuk style is relatively recent, and Dimand has fallen into an error that has seriously retarded studies in Persian art—namely, negative generalization from too few particulars—and the equally demoralizing fallacy, "if it is unfamiliar, it is not real."

One has only to review the literature in all languages to see how shockingly the Seljuk period in Persia has been neglected. It has come into its own lately, thanks to American excavations in Persia, and to the studies and discoveries in the field of Seljuk ornament, partly by Russians, but more by the architectural survey of the Iranian Institute, which has assembled a large repertoire of dated Seljuk ornament *in situ*. The correct method in this subject has been to expect the unexpected, and this should hold for at least a dozen more years.

The group of silver vessels in the Hermitage Museum used as a negative canon by Dimand is misleading. These pieces are clearly the work of two or three artists at most, and no generalization as to the enormous mass of work that was produced through the rich and extensive Seljuk empire can be based on such slender data. Mustawfī, who was himself a state accountant, an hereditary office in his family, recounts that in the time of Abū Sa'īd, when the Mongol renaissance was at its height, the income of the state was only twenty million dinars, whereas at the time of Malik Shah the state revenues were five hundred million dinars.[29] In short, Malik Shah had at his disposal twenty-five times the revenue of the richest of the Mongol princes. The Seljuks were passionate lovers of art, they were builders and creators, and just because such a vast proportion of their work was obliterated by the horrors of the Mongol invasions is no reason for underestimating the mass and variety of their achievements. It is more than doubtful, if we have one-fourth (probably not one-tenth) of 1 per cent of the silver vessels of a sumptuary character that were produced during the 150 years or more of this remarkable regime.

Dimand says: "The style and ornament of the salver are certainly not Seljuk" (p. 211). They are Seljuk in every particular, and inasmuch as the salver has now been published twelve times, there is little excuse for repeating the arguments here. And when he states: "The composition of the design is incompatible with the circular space and differs from that created by the Seljuk artists" (p. 211), he is speaking with little regard for the known material. The use of a large, bold inscription across a circular space was established in the tenth-century. (Cf. the plate in the collection of Jay Holmes, *Survey,* Pl. 572 C). The arrangement of a pattern across the horizontal diameter is also present on ceramic wares, for instance a Rayy bowl with a band of figures and inscriptions and the exergual spaces filled with scrolls and figures (*Survey,* Pl. 660), and a band of figures straight across the circle with the exergual spaces used respectively for a

[28] Cf. also G. Salles, "Les Décors en stuc de Balis," *Mém. III^e Congrès international d'art et d'archéologie iraniens* (Moscow-Leningrad, 1930), pp. 221–26, Pls. XCIX and CII.

[29] Mustawfī, *The Geographical Part of the Nuzhat-al-Qulūb,* trans. G. Le Strange (London, 1919), pp. 32–34.

canopy and a pool is typical of Kashan and Sāva (*Survey,* Pls. 687, 688A, 701).

Moreover, he is again out of touch with the evidence when he says that "the decoration of the salver is engraved in a very careless manner which one would hardly expect in a vessel made, presumably, in a royal workshop." As Harari pointed out and as other students of Seljuk art have repeatedly noted, it is just this apparently careless and sketchy technique that characterizes a great deal of Seljuk work, and instead of conveying "a false idea of Seljuk art," Harari's account is penetrating and entirely just.

The Greek and Chinese ideals of a consistent meticulous finish, with exactitude in all details, was as foreign to Seljuk as it is to much European art. Rigid mechanical perfection never controlled, save in rare and special circumstances, the ornamentation of Persian pottery. One has only to review the *Survey* illustrations to see how loosely the ornament is drawn, even how carelessly placed on most of the wares, up to and including those of the great Seljuks. Vitality, expression were the aims; the free hand, not the ruler, the means; organic life, not the machine, the model. This free and suggestive quality has been universally praised as characteristic of the Persian ceramic art at its finest and as a principal source of its charm.

The same apparent carelessness of treatment extends to other arts of the period, where we might expect greater precision. The lines in some of the Koran illuminations cross and overrun, much in the manner of those on the salver (*Survey,* Pls. 930 B, C, D; 931 A, B). Even the borders are sometimes overrun (*Survey,* Pl. 930 C).

On pottery the instances of this are numberless, as for example, the very careless drawing of the two inner circles on the Chicago luster bowl (*Survey,* Pl. 638), or that on the Kelekian sgraffito plate (*Survey,* Pl. 588 C), or the distorted outlines of the platform on the Eumorfopoulos carved polychrome plate (*Survey,* Pl. 603), or the asymmetry of the bird's tail on the Berlin plate and the disbalanced fleurons of the wing tips (*Survey,* Pl. 606). The maker of the "Aghkand" ware plate in the Art Institute of Chicago (*Survey,* Pl. 611A), which was important enough to be signed, was similarly indifferent to symmetry or detail. All these are Seljuk wares, and typical.

Even the tombstones show this same tendency. On the dated tombstone in the Boston Museum, much the finest of the time that has been recorded and clearly representative of the best of which the period was capable, the contours of the two inner mihrab arches are distorted and asymmetrical (*Survey,* Pl. 520), and on the somewhat earlier dated piece in the Metropolitan Museum (*Survey,* Pl. 519 C), the boundary lines, which one would naturally expect to be precise, also are very irregular.

The engraved bronzes likewise sometimes show the same loose technique. For example, the lines on the Metropolitan Museum jug (*Survey,* Pl. 293), although it is of later date, are all done freehand, with the same wavering irregularity as is present on the Alp-Arslan salver, while the carelessness of execution on the Rabenou candlestick (*Survey,* Pl. 317 D) would have scandalized a Renaissance workman.

Proof that even serious imperfections were tolerated is shown by the beautiful white-on-white Seljuk silk fragment which was given to the Louvre by Mr. and Mrs. Robert Woods Bliss, for the piece has a loom-set fault that results in a doubling of the right-hand margin of the principal figure. Yet the piece was nonetheless accepted and thought good enough to accompany royalty to the grave. Seljuk art must be judged by its own standards and habits, and these not only permitted but welcomed the free drawing to which Dimand objects.

Probably no work of Islamic art ever received in advance of publication such severe testing as the Alp-Arslan salver. Many months of study by a dozen experts who unanimously

endorsed it preceded its announcement. Epigraphers like Wiet, Flury, Minovi, Sarasin, Guest, Bazl, and others were in agreement that the inscription was in every way authentic, and that the invention of a Kufic alphabet of this character has been impossible since medieval times. Some of these studies were supported by detailed analytical drawings.

More important still, and definitive, are the acute studies that were made by H. J. Plenderleith on the metallurgical evidence for the antiquity of the salver. These findings were presented to a group of fellow scientists in England, and the work received warm commendation. Plenderleith also read a paper on these researches at the Leningrad Congress,[30] and likewise took occasion then to show his X-ray microphotographs and other records of his tests to the technicians of the Hermitage Museum, who are among the best, and who thoroughly approved the methods and the conclusions. In his examination of the salver, Plenderleith used the multiple resources of the metallurgist. Chemical analyses, both quantitative and qualitative, were supplemented by a variety of physical tests. Microphotography revealed the porous and cracked condition of the silver. X rays and oblique and tangential lighting, showed characteristic surface and subsurface qualities which are possible only in very old metal. After great age the original structure of silver breaks down into granular crystallization, forming layers of different types of silver, such as silver chloride. Copper salts separate out, and irregular pittings appear, which in a uniform alloy, such as the salver is made of, cannot be in any way artificially imitated. The texture becomes soft and brittle, and the metal gives out a characteristic sound when struck.

The visual appearance to the unaided eye of the patina is of no significance, for it can be imitated by the use of various reagents; but as Plenderleith says: "These artificial patinas are not minerals but substances that have resulted from accelerated corrosion," and they are easily identified. The true patina is "derived from the metal and must of course be consistent with the metal." Spectroscopic analysis and other tests showed that the patina of the salver was organic to the substance, the result of deep intercrystalline oxidization. The scorings that appear in the patina show marked differences from those on the original surface, which the patina has now overlaid.

Even more important are Plenderleith's proofs that silver as old as that of the salver could not be engraved in modern times without the fact being easily detected. In the first place, the crystallization that characterizes the body of the salver is evident also on the surface and in the lines of the engraved portions. Moreover, the lines of the ornament are filled with silver sulphide and silver chloride, typical products of slow crystallization. Again, lines cut in freshly cast metal are clear and sharp, whereas those incised in old silver show marginal fractures and serrations. The lines of the ornament on the salver are firm-edged while experimental cuts made with a very sharp instrument in the salver when Plenderleith was testing it had the typical broken edges.

The effectiveness and dependability of these laboratory methods in the hands of a highly trained and resourceful investigator was strikingly demonstrated by the exposure of a superbly fashioned and patinated silver plate, presumably Bactrian, which was in the Teheran market at the time of the Firdausi celebration there and was adjudged genuine by five outstanding experts in Near Eastern art.[31] It passed every visual test and was, irrespective of origin, a beautiful object. Nonetheless, its pre-

[30] See footnote 26.

[31] One collector offered a large sum for the piece and a well-known museum had begun negotiations for its acquisition.

tensions were completely blasted in a few days by Plenderleith's battery of laboratory techniques.[32] Of these numerous tests for authenticity, the presumed Bactrian plate passed none, the Alp-Arslan salver all. Plenderleith's findings on the Alp-Arslan salver were subsequently independently confirmed by Young, the technician of the Boston Museum.

Although Dimand finds space for some forty-four footnotes, he does not devote even one to citation of any of the serious studies that have already been published about this beautiful and important vessel. Dimand does not mention Plenderleith's admirable work nor take any acount of the writer's study of the foliate patterns on the Alp-Arslan salver.[33] It is incumbent on Dimand to explain why, when he was at pains to quote anonymities, he ignored this literature and failed to meet the arguments of known and recognized colleagues who studied the salver and judged that it was authentic Seljuk work.

Anyone who wishes to indict the Alp-Arslan salver must, first of all, be a first-rate physicist or command the services of physicists of outstanding capacity in this particular type of problem, who could refute the work of the other scientists who have already delivered their unqualifiedly favorable verdicts. He must, in the second place, be a palaeographer and prove that Flury, and Bazl, and Minovi, and the other palaeographers who analyzed the Alp-Arslan salver alphabet are wrong in their assertions that there is no one living who could create a consistent Seljuk alphabet of this type. The only proof would be the production of such an alphabet and the demonstration of its capacity to survive criticism. No effort that has ever been made along this line—and there have been a number of them—has ever succeeded.

[32] A. U. Pope, "An Alleged 'Bactrian' Forgery," *Burlington Mag.*, LXVI (1935), 288–93.

[33] "Foliate Patterns of the Alp Arslan Salver," *Bull. Amer. Instit. Persian Art and Archaeol.*, IV (1935): 74–78.

Nearly all these criticisms of Dimand's suspicions of the Alp-Arslan salver apply equally to his treatment of the Seljuk silver treasure in the Harari collection. Again, the vessels were three months in the British Museum laboratories, ideally equipped physically and intellectually for the solution of such problems of ancient materials and for the detection of falsifications. Plenderleith similarly published in 1930 a scientific report on these silver pieces, some of which were as fragile as burned paper. And what would Dimand say about the scores of tiny links of a chain found with these pieces, which must have required months to make, and were wholly without commercial value? They are in every way identical with the silver of the vessels. It might be said in passing that Kühnel, one of the most conservative of all scholars in the field and most reluctant to accept new and surprising findings, declared at the Second International Congress in London that he considered this silver collection to be early eleventh century,[34] a reference given in the *Survey*, which Dimand does not mention.

Is it permissible that great works of art and precious historical documents should be called in question on such flimsy evidence while proofs of their authenticity are ignored or suppressed? Dimand recounts the half successful effort to launch forgeries of presumably Seljuk and Mongol gold jewelry on the Paris, London, and New York markets about twenty years ago. As a matter of record, although some of these pieces had a rather successful circulation for a year or two (two pieces were bought by museums, several by famous collectors, a number by art dealers, and several were passed, rather too hastily, by one of the most experienced scholars in the whole field of Persian art), they were first exposed by the writer in 1925. At the International Exhibition of Persian Art in Phila-

[34] *Proc. Second International Congress of Persian Art* (London, 1931), p. 13.

delphia in 1926, several of the false pieces were put beside an uncontestably genuine example, lent by the Detroit Institute of Art, and the demonstration was so fatal that the owner of the false pieces soon withdrew them.

The remainder of Dimand's article contains some astute and valuable observations, placing before Harari a number of problems which he will have to try to solve.

Carpets

Erdmann, in his review, has written an important contribution to the history of carpets. He is exceedingly generous and appreciative of the difficulties and effort that the chapter represented—appreciation that is gratefully acknowledged. Erdmann brings many new points to light and makes some sound corrections in the writer's chapter. Naturally, there are many points that call for a serious and somewhat extended discussion, and perhaps the editor of *Ars Islamica* will permit such an article at a later date. The acknowledgment of the fine spirit of Erdmann's review, the immense learning, the prodigious industry and conscientious care that have gone into it, does not involve assent to all his judgments, many of which ought to be confronted with other facts and arguments.

Summary

These reviews have enhanced the importance of the subjects; they have provided valuable corrections, mostly of details, have contributed new knowledge, and have raised some provocative problems which will stimulate thinking and research. But no real estimate of the *Survey* emerges; there is little to guide the "person not a specialist" to a "full evaluation," even of the few chapters reviewed. The attitude of some of the reviewers leaves much to be desired, several of them have perpetrated grave errors, and much that is significant has been overlooked. The character and purpose of the *Survey* are ignored or misjudged, no writer gives any indication of its place in the larger program in which it was only an element, and there is not much of that warmth of welcome which happily came from famous personalities in allied cultural fields, as well as noted specialists in Persian art, such as Sir Kenneth Clark, Binyon, Sarre, Reuther, Pelliot, Focillon, Grousset, Orbeli, Casson, Monneret, De Villard, Trever, Diakanov, and others.

In the last analysis the *Survey* must continue to stand on its own. More and different appraisals there will be, but in this country they will come rather slowly, particularly from young scholars with a fresh approach, actually employing the material of the *Survey* for their own research or for background supplementation.

The role of the *Survey* in the field of Near Eastern art will gradually emerge more clearly and justly than it has been envisaged by the *Ars Islamica* reviewers. The editors, writers, sponsors, and publishers can quite afford to await that time.

ARTHUR UPHAM POPE

A REPLY

Mr. Pope's criticism of my review is full of statements which do not clarify the controversial questions under discussion. With regard to the chapter of Orbeli, Pope attempts to justify the introduction of inserts by Dr. Ackerman. He acknowledges that this procedure was unusual, but states that it was done to "fill in specific gaps in Professor Orbeli's exposition." In one place Pope regards Orbeli's chapter as the first comprehensive history of Sasanian metalwork; further on he calls Orbeli's exposition, without insertions, "fragmentary, incomplete and interrupted." I think that Pope is not quite fair to Orbeli in criticizing him thus strongly. I am afraid that I must defend Orbeli, whose chapter even without the sections in brackets is a real contribution. I still believe that the addition of Dr. Ackerman's name as a collaborator would have been proper.

I cannot agree with the statement that Orbeli's chapter is the greatest single contribution to the subject of Sasanian silver that has yet appeared. In my opinion Erdmann's study on Sasanian silver on which hunting scenes are depicted, which appeared before the *Survey* was published, must be regarded as the most important contribution so far. In it one finds the first attempt to give an account of the stylistic development of Sasanian silver, which is almost completely missing in Orbeli's chapter. Aesthetic interpretations used by the author of this chapter, and also frequently through the *Survey,* are a poor substitute for analysis of style, which is of primary importance to every archaeologist and art historian. Schapiro in his excellent review of the whole *Survey* remarks rightly as follows: "But an embracing vision of Persian art as a whole in terms of stylistic development and in relation to the large outlines of Persian history one looks for in vain."

Pope objects to my calling Harari a nonprofessional. I wonder whether Harari approved of the statements Pope is making on his behalf. Harari is a businessman and a well-known collector of Islamic metalwork. Knowing Harari as a modest man, I doubt whether he has ever aspired to be regarded as a professional or as one of the best Arabic epigraphists. Pope says that in the field of Seljuk metal I have challenged some of Harari's most important statements. This applies apparently only to the silver dish in the Boston Museum. He is very sensitive to my arguments with regard to the silver salver, asserting that they are out of accord with the facts. Now let us see what the facts are according to Pope. He tells us that the silver dish was found in Russia in 1931. Pope is annoyed that I have put an exclamation point after the sentence: "It was, apparently for generations, in a private collection!" He asks why I am skeptical on this point. The answer is quite simple: neither Pope nor Harari have produced any satisfactory evidence that the dish actually came from a collection in Russia. According to their information the piece had been shown in a small provincial Russian exhibition, probably at Samara. How could a piece of "such importance," which was for generations in a collection, escape the notice of Russian scholars, like Smirnov and others? In no Russian catalogue or other publication is there a mention of such a dish in a private collection. There is, on the other hand, what seems to be well-founded rumor, that the dish came from Persia. Until Pope furnishes definite proof that it came from Russia, its provenance is still obscure.

Pope attempts again to prove, at great length, that the silver dish in Boston is not a falsification, although in my review I have not raised the question of the authenticity of the silver dish. I was primarily interested in the style of the ornament and its relation to that of other Seljuk metalwork. The evidence quoted by Pope is a recapitulation of old material, which has long been available, and does not add anything new to our knowledge of the salver and its relation to Seljuk silver. Pope would like to convey the impression that the Seljuk period in Persia has been shockingly (!) neglected and that the understanding of Seljuk style in general is relatively recent. But Seljuk architecture, metalwork, pottery, and stucco have been known to us for years, and examples are in various museums here and abroad. Nor does Pope acknowledge that several pages of my review are devoted to Seljuk metalwork of Iran and contain new criteria for the classification of Seljuk bronzes and silver. Seljuk silver in Russian collections, published by Smirnov and Orbeli, so important in determining the date of the silver salver in Boston, is dismissed lightly. Pope makes a rather indeterminate statement that the use of this group of silver vessels as "a negative canon" is misleading, as these pieces are the work of two or three artists at most (!). How does he know that? There are about seventeen Seljuk silver vessels in the

Hermitage and a few in other collections, which are no doubt the work of more than two or three silversmiths. Pope and Harari in rejecting these silver vessels as a canon, propose that the Boston silver dish, a controversial piece still under discussion, be used as a canon for judging early Seljuk silver. Such a procedure is contrary to all established and recognized rules of research in the field of art. Pope states also that no generalization as to Seljuk silver can be based on such "slender data," meaning the silver in Russia. It is quite obvious that objects which could not sustain his argumentation were simply rejected. Pope who objects here to "generalization from too few particulars" did not hesitate to use the same method to a considerable extent in his chapter on Seljuk ornament, for many deductions are made from one piece, that is, the Boston silver salver. Pope fails to recognize the fact that Seljuk art developed certain characteristic features which are apparent in all works of art made not only in Iran but also in other Seljuk provinces. The silver vessels in Russia, doubtless of Iranian origin, show all the artistic qualities usually associated with Seljuk art. The Boston silver salver, on the contrary, lacks all these qualities. It is curious that Pope is unable to find any similarity in style or technique between the silver vessels in Russia and the Boston silver dish.

Pope has his own canon in establishing the date and Seljuk character of the ornament of the Boston dish. My contention was that the style of the decoration is not Seljuk. Pope says that it is Seljuk in every particular, but fails to produce any satisfactory evidence to support his argument. He is annoyed that I have not mentioned previous publications on the dish, particularly his own article, in *The Bulletin of the Iranian Institute,* and that of Plenderleith. Why do that if the reader can find all of Pope's previous arguments and evidence in the *Survey.* Speaking about the technique of the engraving, Pope seems to be confused on the use of the term "careless." He states that a careless and sketchy technique characterizes a great deal of Seljuk work. To him careless is synonymous with sketchy, which is contrary to established terminology. He makes a fundamental error by comparing the technique and design of the silver dish with that of pottery (mostly peasant ware), illumination, stone reliefs, and bronzes of the Seljuk period, none of which can be regarded as made in a royal shop. Why does he not compare the technique and design of the Boston dish with that of known silver vessels in Russia and other collections, some of which also have an engraved decoration of Kufic inscriptions, scrollwork, and animals? Has he ever seen in Seljuk art such griffins as those on the Boston silver dish? He admits indirectly that the design of the silver dish is different, by stating that in Seljuk art one should expect the unexpected, and that that holds for at least a dozen more years! Is it possible that the Boston silver dish is unique? Where is the new evidence and the facts for dating the silver dish to the eleventh century? Until more convincing and positive evidence is produced by Pope and others the Persian vessels in the Hermitage and other collections, whose provenance is established beyond any doubt, will furnish the canon for judging other Seljuk silver vessels.

Pope states that Plenderleith's chemical and metallurgical studies show that the silver is old; this, however, does not prove that the silver dish is Seljuk and of the eleventh century. I do not intend to go into a discussion regarding the question of its authenticity, for this has no relation to the contents of my review. As mentioned before I was primarily interested in the ornament and its relation to Seljuk style. I would like only to remark that metallurgical evidence alone is not always as definitive as Pope asserts. Any experienced museum man knows that such analysis must be supported by stylistic evidence. With regard to the Harari silver treasure Pope again uses Plenderleith's observa-

tions on the condition of the silver, but fails to explain the great discrepancies in style, which indicate several periods.

The third paragraph from the end seems to be the climax of Pope's argumentations. He simply states that no one has a right to question great works of art and precious historical documents. He is quite right in principle, but if he applies that to the silver salver, I must disagree with him. As yet the silver salver has not been accepted either as a great work of art or as a precious historical document. Pope's method of reasoning is best characterized by a quotation from Professor Schapiro's review of the *Survey*:

> I do not believe that these defects of the *Survey* are due simply to the undeveloped character of the studies in this field or are intrinsic in the elusive, variable qualities of the objects themselves. For behind these weaknesses we see also assumptions about history and art and uncritical analogical methods of thinking . . . .

M. S. DIMAND

M. GODARD'S REVIEW OF THE ARCHITECTURAL SECTION OF *A Survey of Persian Art*

M. André Godard's opinion of the architectural section of the *Survey of Persian Art* may be readily explained [1] and readily answered. Its tone will excuse some severity in my reply.

Out of nine columns of sarcasm and contradiction, a small but real criticism of what I may soberly describe as the first extensive and systematic treatment of a difficult subject has emerged: the correction to my plan of Kadj,[2] which I willingly accept.

I invite any who might be tempted to take Godard's "Compte-rendu" as a review to compare at every point what I have written with what Godard represents me as having written. For those to whom the *Survey* is not immediately accessible I may be permitted to draw attention to the more remarkable of these travesties.

I am accused of dating the Kadj mosque to the second century of the Hijra on the grounds that it is sometimes called Masdjid 'Atīḳ, "the Old Mosque." [3] Actually, my text [4] mentions no such name (indeed I never knew of any!) and contains no such argument: its observations were wholly stylistic and material, and my final suggestion was that its appearance "might justify a tentative attribution to the ninth century." I reserve my judgment on the arguments in favor of a later dating which so resourceful an "archaeologist" has been pleased to furnish [5] until I have an opportunity to revisit the site.

As for the mosque of Tabriz, I never felt nor expressed a belief in the antiquity of the present building. (My words were: "*If* the Masdjid-i-Djāmi' of Tabrīz, founded by Zubayda, retains any of its eighth century form . . . This is very doubtful. The building has not been studied.")

The second folly imputed to me is regarding brick dimensions as an infallible method of dating, and Godard writes ironically: "Granted that each epoch doubtless deposited in the 'Office of Weights and Measures' of the day a model brick, whose dimensions were henceforth its exclusive property, it is only necessary to measure the bricks of a building to know its date at once." [6] I may be forgiven for my astonish-

[1] Godard's "Compte-rendu" (*Ars Islamica*, IX [1941], 1–23) is the only answer he has found it convenient to make to the serious implications in the last part of my "Review of *Athār-é Īrān*" (*Bull. Amer. Instit. Iranian Art and Archaeol.*, V, No. 1 [1937], 56).

[2] My error was the result of a fault in my record of measurements; I had no photographs when drawing this plan in Persia and had the alternative of retaining or inventing a dimension.

[3] Godard, *op. cit.*, p. 4.

[4] E. Schroeder, "Islamic Architecture, First Period," *A Survey of Persian Art*, ed. by A. U. Pope and P. Ackerman (London and New York, 1939), II, 931–32.

[5] Godard, *op. cit.*, p. 4.

[6] *Ibid.*, p. 5

ment, when I refer to my poor words which provoked this irony. I wrote:

> General arguments based on brick-sizes are quite invalid in Persia, as elsewhere . . . local practice, and the purpose for which the brick is to be used, govern the size so much that no argument can be applied to any structure based on the bricks of another structure. But in a single monument the bricks may *help* (I may now put this in italics) to distinguish periods of repair. They form an argument which must be applied with caution, from which caution the writer is aware that he may be considered to have erred.[7]

Whether or not I erred I can only invite readers to decide for themselves. But if I confess to the heinous use of brick sizes as *contributive* evidence, what must I think of Godard, who has turned king's evidence after using them as *proof* final and conclusive ("en fait les briques de la partie inférieure et de la partie supérieure sont les mêmes, et cela suffit à régler le conflit")?[8] Perhaps my crime lay rather in publishing my reasons for supposing that while my method, admittedly pedestrian and unimaginative, was to measure my brick dimensions, Godard's method was to invent them, a method more expeditious, much more original, and much, much more convenient.[9]

I must not now reopen the problem of the Abbasid form of the Djāmi' of Isfahan;[10] but in passing I may refer anybody tempted to believe Godard's asseveration that Māfarrūkhī describes the mosque "soigneusement et en détail" to consult Godard's[11] own publication, and to see what his architectural information amounts to. And I cannot suppress all astonishment at the singular manner and still more singular matter of Godard's "it is impossible, I say impossible, that it could have been built before the twelfth century. The first known combination of a dome-chamber originally joined to a large īwān which serves as porch to it is in the Djāmi' Mosque of Zawāra, dated 1135/6."[12] After so logical a disproof of their existence, let such ancient and respectable examples of the combination as Sasanian Fīrūzābād[13] and Sasanian Ḳaṣr-i-Shīrīn[14] sink abashed into the ground; and let the eighth-century Dār al-Imāra at Merv[15] and the ninth-century palace of

[7] Schroeder, *op. cit.*, p. 950, n. 5.

[8] A. Godard, "Historique du Masdjid-é Djum'a d'Iṣfahān," *Athār-é Īrān*, I, Fasc. 2 (1936), 228.

[9] Godard tacitly admitted that he invented his dimensions by admitting and quoting parallels to the dimensions I give. See Schroeder, "Review of *Athār-é Īrān*," and, for a fuller account of the difference between the brickwork of the upper and lower parts of the Isfahan Djāmi' sanctuary, Schroeder, "Islamic Architecture, First Period," pp. 955–56.

[10] But see below under "correction" to Plate 292 of the *Survey*, and my remarks on Māfarrūkhī's dārs toward the end of this article. Godard's review contains no material which seems to render desirable a revision of the views expressed in Schroeder (*op. cit.*, pp. 954–63). Godard's own hypothesis of the early history of the mosque contains inherent contradictions (see Schroeder, "Review of *Athār-é Īrān*") and offers no suggestion for the actual dating of some of the most interesting structures in the building. He actually excludes from his hypothetical plan of the mosque at the end of the Seljuk period the area of vaults 47, 48, 60, and 61 (see my plan, "Islamic Architecture, First Period," Fig. 328, and Godard's plan, *op. cit.*, Fig. 182), implying that they are post-Seljuk. No hypothesis with any such implications can be regarded as satisfactory. Moreover, some of Godard's statements, such as, for instance, that the form of the Isfahan sanctuary piers is found also at Gulpaigan, are at variance with the facts. The Gulpaigan piers resemble only the modified exterior of the sanctuary corners: there is nothing at Gulpaigan resembling the characteristic and remarkable pleating of the piers as a whole. I am far from believing that my hypothesis will be confirmed in every detail when the mosque has been completely explained; I can only repeat that, on the whole, it still fits the facts of the building which I have observed, and that Godard's hypothesis does not fit these facts.

[11] *Op. cit.*, pp. 216–20.

[12] "Compte-rendu," p. 6.

[13] O. Reuther, "Sasanian Architecture," *A Survey of Persian Art* (London-New York, 1938), I, 535.

[14] *Ibid.*, pp. 541–42.

[15] K. A. C. Creswell, *Early Muslim Architecture* (Oxford, 1940), II, 3–4.

Balkuwārā [16] betake themselves to the latter days where they belong. It is true that Godard, with scholarly thoroughness, appends a long list of late examples. But do they disprove the early ones?

My third alleged offence is *datation à l'esbrouffe,* "dating by hustling," or "by brag." My colleague abstracts and perverts, from an argument about certain vaults at Isfahan, two sentences, which in my text express, with a question mark, a hypothetical identification which I proposed to disprove.[17] "Et, sans plus," writes Godard, "on parle ensuite de 'l'identification de la bibliothèque' comme d'un fait accompli, et des 'voûtes de la bibliothèque' comme si réellement cette identification avait été faite." [18]

Does it escape the eye of Godard that the whole purpose of my argument is to *reject* the identification I am accused of assuming? Not one of his "citations," which he scrupulously underlines with his word "textuellement," is permitted to retain a vestige of the meaning it had in my text, a meaning evident, even to one who had not followed my argument, in the quotation marks I placed around "library vaults." [19]

"Textuellement!" The Lord's Prayer reads "textuellement": "Our Father which art . . . evil . . . Give us this day . . . the Kingdom, the Power, and the Glory." And so Godard may "cite" it. But should he pursue such an extract with fulminations against the unworthy political pretensions of its Divine Author, our admiration for the moral enthusiasm of the critic must yield to our contempt for the critical method of the moralist.

It might have been thought reasonable to explain such a performance by supposing that Godard cannot read or understand English. Unfortunately, this explanation is impossible; for he lets slip in a hasty sentence proof that he has read, marked, and studied my work, whatever pangs of inward indigestion he may have suffered. I devoted, I think, a single sentence of my chapter on the Seljuk period to the Djāmi' of Naṭanz.[20] An annotation supplied my reasons for attributing part of that building to Seljuk times, although Godard, its publisher,[21] misinterpreting both the plan and the historical inscription, had attributed it in its entirety to the fourteenth century. My suggestion is already stored as an accepted fact in Godard's memory; for it comes tumbling out as such, along with other material of less than doubtful relevance, on page 5 of his review.[22]

But if Godard has himself benefited even to a small extent from my attempt to set in order the earlier Islamic buildings of Persia, why, in implying that it is practically worthless,[23] does he evince such anxiety that no one else should do so? Is it because I have struggled with certain problems which have apparently seemed to Godard too difficult for treatment? [24] My writing gave me occasion to acknowledge and endorse his judgment, to quote his words with admiration, and to cite his name very frequently; but it was also my destiny to differ in opinion from him on numerous points, and I cannot entirely discard the suspicion that this may be some part of the reason for my colleague's energetic endeavor to destroy my credit.

Godard has appended a list of "corrections" to the titles of the plates in the *Survey.* Of

[16] *Ibid.,* Figs. 214–15, after Herzfeld.

[17] Schroeder, *op. cit.,* pp. 958–62.

[18] Godard, *op. cit.,* p. 7.

[19] Schroeder, *op. cit.,* p. 994.

[20] *Ibid.,* pp. 994, 995.

[21] "Naṭanz," *Aṯār-é Īrān,* I, Fasc. 1 (1936), 83–90.

[22] "Compte-rendu," p. 5, right-hand column, ll. 5–6.

[23] *Ibid.,* p. 7.

[24] I may mention among others the problems of the Shiraz Djāmi' and of Seljuk vaulting. Godard's descriptions, always well written, sometimes simplify problems by omitting constituent factors; cf. his publication of Ardistan ("Ardistān et Zawārī," *Aṯār-é Īrān,* I, Fasc. 2 [1936], 288–96) and his theory of a "mosquée-kiosque" at that site with Schroeder, *op. cit.,* pp. 950–54, and *idem,* "Islamic Architecture, Seljūq Period," *A Survey of Persian Art,* II, 992–93.

those which concern that part of the architectural section which was my province, his corrections to the titles of Plates 305, 339, 340, and 346, and the misprint on Plate 359 are acceptable. On Plates 355 and 356 he may be informed that "d." signifies "died." The "d. 1186" on Plate 345 appears to be a misprint. The remaining twelve "corrections" I may answer as follows:

Plate 258. Godard published this building under the erroneous name "Tārī khāna," "the house of God," and apparently wishes posterity to share his error. At Damghan I verified the fact that it is locally called Tārīk khāna, "the dark house"; and since my dictionary affords me no grounds for believing that "Tārī khāna" does or could mean "the house of God," I saw no reason for continuing a mistaken nomenclature. Tārī khāna (if the name ever were so pronounced) could mean "house of darkness" and thus approximate the meaning of Tārīk khāna.

Plate 259 A. On this matter of opinion Godard is opposed by the formidable opinion of Creswell.[25] Some support for his affirmation is desirable.

Plate 260 C. If Godard has a reason to doubt the title which the opinion of Herzfeld sanctions, one may pardonably expect the reason and not the doubt alone.

Plate 279. As I have already exposed the weaknesses inherent in Godard's account of Ardistan,[26] and as he has not taken the present opportunity to answer my criticisms, I cannot regard the mere affirmation of his theory as a correction.

Plate 280. I think that this title expresses to an American or English eye all that Godard would have it express.

Plate 281. I found both names in use at Kerman, and chose to use Djabal-i-sang both because Diez[27] had already sanctioned it and because I preferred it.

Plates 285–87. Again, I cannot regard mere reiteration of a criticized theory as a correction.

Plate 292. Godard is mistaken. My text refers to "such round piers as those of the east corner," and the plate illustrates those of vault number 174 and its neighbors. Godard published photographs of a partly stripped round pier,[28] without stating where it lay in the mosque, but implying that it lay in that part where I have endeavored to show the probability of some Abbasid survivals. In my text[29] I pointed out that originally the cincture of the mosque was in alignment with the backs of the present sanctuary and īwāns. Only within that cincture have I ever believed that pre-Seljuk work remained. The purpose of Godard's argument was to refute that belief by publishing what he took to be a Seljuk round pier from what I believed to be the pre-Seljuk mosque. I had, at the time when I saw his publication and was reading proof of my chapters, sufficient confidence in Godard to accept the implication, and to treat his pier as one of the round piers within the old cincture, without further question.[30] My confidence was misplaced. On making a careful comparison of his figures with my own, I am satisfied that the pier he reproduced is the pier between bays 96, 97, 103, and 104 of my plan.[31] This pier lies outside the old cincture, and is wholly irrelevant to the argument into which Godard introduced it. I cannot but conclude that it was for this reason that he suppressed any mention of its whereabouts in the mosque, and even in his recent review has not stated its position.

Plate 295. Again, Godard seems mistaken.

[25] *Op. cit.*, p. 364.
[26] See n. 24.
[27] *Persien* (Gotha, 1923), p. 39, and Taf. 79.
[28] "Historique du Masdjid-é Djum'a d'Iṣfahān," Figs. 153–54.
[29] "Islamic Architecture, First Period," pp. 957–58.
[30] *Ibid.*, p. 963, ll. 5–13.
[31] *Ibid.*, Fig. 328.

Since he gives no definition of the term armature which would preclude its use in this connection, I content myself by pointing to its use in a formidably technical description by Smith of a similar construction at Sīn.[32] Professor Conant of the Harvard Architectural School assures me that Godard is also mistaken in his assertion that these devices are "prejudicial to the permanence of buildings." And lastly, Godard's observation that these "armatures" are sometimes only one or two bricks thick seems literally "superficial." On the surface, it is true, sometimes only one brick shows; but the very plates the titles of which he is "correcting" show that in these instances the single brick is outset from the middle of an armature of about six bricks in order to lie flush with, and by its anchoring, to aid the cohesion of, a shallow revetment.

Plate 306. The inscription of this building refers it to the reign of Muhammad, and the form of the plate title is the most convenient way of shortly expressing the fact.

Plate 320. Godard corrects what appears to be a misprint in the title,[33] but his statement that the inscription only dates the décor is unacceptable. The addition of revetment and plasterwork to a finished core "après coup" appears to have been normal in the Seljuk period; however, if Godard means simply that the building had to be put up before it was decorated, I shall not be the man to gainsay him.

The remaining "corrections" concern plates other than those which illustrated my contributions. Pope will doubtless answer for himself.

Godard's "Compte-rendu" being of such slight utility, it may be proper for me to express some second thoughts, modifying views I had when I was writing for *A Survey of Persian Art.* Of these, undoubtedly the most important is the question of color in the early Islamic architecture of Persia. I fear that I implied that Seljuk architects relied only on form for their effects.[34] The Metropolitan Museum excavations of earlier buildings at Nishapur weakened this belief; I recall the decoration of Sangbast, the description of Sindjar's tomb with its blue dome, the fragments of color on surviving plaster work. I now think it probable that early Islamic and Seljuk architecture was much more lavishly colored than it is easy for us to realize. The technique, painted plaster, especially if laid on a mud-brick wall, was somewhat impermanent, nor do I think that the buildings can ever have equalled in effect the kāshī-clothed buildings which replaced them; but that color was extensively used and characteristic of the style is my present opinion.

I stated more strongly than I now believe that what I called the brick style more or less expelled for a time the plaster-decoration style.[35] Though the triumphs of eleventh-century architecture are triumphs of brickwork, it is necessary to assume a steady maintenance of the tradition of plaster cutting to explain even its limited use along with brick and its ample and wonderful use at the Ḥaidarīya of Kazvin.

I am now inclined to question on general historical grounds, as well as in the light of discoveries made since I wrote the opening pages of my chapter on the Seljuk period, whether the provinces of Djibāl and Rayy may not have been more important fields of architectural invention than is indicated on those pages. I would stress strongly my hint on page 1003.[36]

An attempt has been recently made by M. B. Smith [37] to cast doubt upon the hypothesis that the pavilion mosque [38] existed as a type. His argument begins with a passage from an in-

[32] M. B. Smith, "Two Dated Monuments at Sīn," *Ars Islamica,* VI (1939), 8–10, Fig. 22.

[33] Cf. Schroeder, "Islamic Architecture, Seljūq Period," Pl. 279 and my text p. 992.

[34] *Ibid.,* p. 1045.

[35] *Ibid.,* p. 985.

[36] *Ibid.,* ll. 28–32.

[37] Smith, *op. cit.,* p. 6, n. 44.

[38] Schroeder, *op. cit.,* pp. 939 ff., 994 ff.

scription at Barsīān, and from the restored phrase "the ṣaḥn renewed" he deduces that the "sanctuary was not the only structure bordering on the ṣaḥn" in pre-Safawid times! This reasoning seems to spring from his own persistent use of the word "ṣaḥn," in his description of Barsīān, for the buildings bordering the ṣaḥn, a usage for which I can find no authority. The phrase which caused Smith to beat so precipitate a retreat from the idea of the pavilion mosque admits of various interpretations which should be shown to be faulty before any other construction is put on it: "the ṣaḥn renewed" should mean "the ṣaḥn was releveled," "the ṣaḥn was replanted," "the ṣaḥn was repebbled," "the ṣaḥn was repaved," or "the ṣaḥn was rewalled" rather than "new riwāḳs," or "new dārs," or "new īwāns were put up round the ṣaḥn."

Smith adduced the climate of Iran as an additional argument against the idea of an open place. But the climate of Iran is not rigorous, with the exception of the mountains and the extreme north, and the central deserts and extreme south, in winter and in summer respectively. Chardin's praise of the climate still seems justified. Moreover, even if the climate were less temperate than it is, the argument would not be valid against the known fact of the merely walled or trench-bound mosques of early Islam in far more oppressive summer climates. Persians keep indoors in bad winter weather and take advantage of an express traditional permission which allows rain to excuse Muslims from attending the mosque. For the imam and the unyieldingly devout the roofed sanctuary suffices.

This reduces Smith's argument to the question "what evidence can be offered to prove that the Seljuk mosque did not have contemporary mud brick structures on either flank?" The question is rhetorical, since such structures could disappear without leaving any trace.

These deductions thus seem, when examined, to be founded on misconceptions. In support of the idea of the isolated sanctuary or pavilion type of mosque is the material evidence produced by Godard, by Smith from Barsīān, and by myself from Naṭanz. I should like to point out the strong evidence that the Barsīān sanctuary had no openings in its side walls. Historically, the introduction of the mimbar in muṣallās from Marwān's time, the recorded presence in this period of muṣallās in Persia, the construction of mosques on muṣallās, and the recorded erection of ḳubbas over mihrabs on account of the special sanctity of this part of the mosque, all tend to confirm the material evidenced. That Persian mosques, especially, should have had such a plan is credible in the light of Sasanian precedent, since the plan is that of a Sasanian cult building without the priests' lodgings.[39] That a like form was still familiar long after the period in which it had prevailed and waned is proved by the muṣallā of Meshed.

Very significant discoveries have been made at Nishapur since the *Survey* articles were written. Architecturally, most surprising is the evidence of the use of a complicated stalactite system at least as early as the tenth century.[40] This tends to confirm the view of the origin of stalactites tentatively put forward by me on page 1007 of the *Survey,* and disposes [41] of the alternative view that stalactites were a multiplication of the elements of the Isfahan-Yezd type of squinch.[42] The great squinches and the stalactite domes must be regarded as formal and decorative achievements.

In addition to these more serious corrections of emphasis, I should like to take this oppor-

[39] Ḳaṣr-i-Shīrīn, restored plan by Reuther, *op. cit.,* I, Fig. 158.

[40] W. Hauser, T. M. Upton, and C. K. Wilkinson, "The Īrānian Expedition, 1937. The Museum's Excavations at Nīshāpūr," *Bull. Metropolitan Mus. Art,* XXXIII, No. 11 (1938), 9–10.

[41] At least until some dome of the Isfahan-Yezd type much earlier than Duwāzdah Imām is discovered.

[42] Schroeder, *op. cit.,* p. 1002.

tunity to alter and supplement two minor matters. It is my opinion that the four dārs or buildings mentioned by Māfarrūkhī as existing in the Isfahan mosque were isolated structures standing in the ṣaḥn; analogy suggests this, since many mosques of the early Islamic period had standing in their courts shabistāns for travelers, separate lodgings for Koran readers, lawyers, and students, enclosed buildings for women, cloakrooms and manẓaras built by local governors, and treasuries. That four buildings of this category "besides the riwāḳs" as Māfarrūkhī expressly stated, once stood in the Djāmi' court is undoubtedly the simplest and most probable interpretation of his passage.[43] In later periods there is recorded elsewhere a general clearing away of these encumbrances. At Isfahan such a clearing must be assumed.

I am now inclined to attach more importance to the later affinities of the small domes of Zavān and Khwādja Sa'd. I attributed them to the late twelfth or thirteenth century and was induced to incline to the earlier of the two datings. These two domes seem to me to be thirteenth century at the earliest.

The most important supplementary material, apart from that in Creswell's monumental work, which has appeared since the *Survey* was written, is that recovered by Russian expeditions in Central Asia, and especially by the excavations in Khwarazm.[44] I necessarily neglected rural and private architecture; the material did not exist. But the evolution of the great forms, to which I was limited, could not give that just general picture of Persian architecture and its growth up to the Mongol invasion, which was my purpose.

Some interesting observations upon construction have been made by Smith. His rare generalizations must be received with caution,[45] and his useful lists and bibliographies should generally be supplemented by reference to the publications of Pope, which Smith systematically excludes.

ERIC SCHROEDER

Old Routes of Western Īrān, Narrative of an Archaeological Journey Carried Out and Recorded by Sir Aurel Stein, K.C.I.E. London: Macmillan and Co., 1940. Pp. xviii + 432, 31 pls.; illus. 112; plans and sketch plans 25; 8 maps. $12.

The present and future archaeologist will owe a great debt to Sir Aurel Stein for his far-reaching and extended survey of ancient Iran. The present volume forms in a way a sequel to his *Archaeological Reconnaissances in North-Western India and South-Eastern Īrān* published in 1937, and the account "An Archaeological Tour in Ancient Persis" published in *Iraq* (III [1936]), for it traces his journey from Shiraz, the terminus of his previous expeditions, through six provinces of western Iran to the borders of Lake Urmia. Taken together, his series of explorations present a striking picture of the great belt of chalcolithic painted pottery, generally

[43] Godard (*op. cit.,* Fig. 181) has no justification for the arbitrary placing of the dārs outside the mosque, which his hypothetical plan indicates.

[44] H. Field and E. Prostov, "Excavations at Khwarazm, 1937–1938," *Ars Islamica,* VI (1938), 158–66.

[45] Smith, who read my chapters in proof many months before the publication of the *Survey,* seems, unfortunately, to have followed my mistaken alternative suggestion that stalactites were a decorative degeneration of the Isfahan-Yezd squinch even after the publication of the Nishapur material (Smith, *op. cit.,* p. 8. Smith makes no acknowledgment, and it is possible that this error was original also with him). Earlier Smith ("Material for a Corpus of Early Iranian Islamic Architecture," *Ars Islamica,* IV [1937], p. 39), in his list of early examples of hazārbāf brickwork made the same omission that I had made, and began, as I had, with Ukhaiḍir, but he nevertheless went on to state as "practically certain" that this technique came from Khurasan-Transcaspia. No such generalization can be regarded as justifiable if it does not explain the example I omitted, the hazārbāf of very Greek aspect on the Baghdad gate of Rakka (Creswell, *op. cit.,* II, 44 is clearer than the earlier publication of this ruin).

ornamented with geometric designs, from Makran and Baluchistan to the limit of his excavations in the north; of the tremendous Sasanian and Muhammadan development throughout western Iran; and of the differences between Indian and Persian art and architecture in the post-Hellenistic period.

The last and longest of his journeys, extending more than thirteen months from November, 1935, onward, was by no means less easy than his previous surveys. The great differences in temperature between the western alluvial plain and the high mountain wind-swept passes, the lack of adequate roads, not to speak of the absence of maps and the not infrequent obstructions placed in his way by local authorities, would have deterred any but the most ardent and indefatigable archaeologist. An outstanding result, indeed, of his tour is the detailed map of his journey with accurate data on the rivers, the mountain heights and particularly the location of archaeological sites. The narrative form in which the account is couched has certain obvious advantages. The difficulties at river crossings accentuate the importance of the great bridges erected by Sasanians and Muhammadans along the ancient arteries of traffic; and the account of modern gardens and ancient canalization in the valleys supplies a much needed background to the usual picture of ancient sites in Persia. One obtains a glimpse in his volume of the tremendous post roads of the Achaemenids which so impressed the Greeks, and an actual view of the ancient bridges which formed the essential links of these great caravan highways in Sasanian if not Parthian times. Similarly, through his account of modern wooded stretches one may envisage the great oak forests which in ancient times must in extent have rivaled the forests of Lebanon and have furnished the columns for the predecessors of the columned halls of Persepolis and Susa.

In addition to the description of ancient bridges and highways, the exploration of numerous chalcolithic sites, and an account of ruined Sasanian and early Islamic fortresses and cities, the volume has a number of quite exceptional contributions to make. The "Persian gates" on the direct road between Susa and Persepolis are carefully studied from the point of view of the storming of the pass by Alexander. At Tang-i-Sarwak, a few miles north of Behbehan, a great series of Parthian reliefs was photographed. Sir Aurel Stein was the first to explore and excavate the sanctuary at Shamī from which the great bronze statue of a Parthian king had been recovered shortly before his arrival, and his reexamination of the caves of Karafto with the new squeeze of the important Greek inscription of Heracles serves to identify more exactly the mountain Sanbulos mentioned by Tacitus.[1] In only one major task was he not entirely successful, since his search for actual Luristan bronzes in the tombs of that district was unfruitful due to the previous untiring zeal of local inhabitants to supply the dealers in antiquities. Even so, his account of pottery and minor finds in the necropolises and ancient village sites of Luristan forms a distinct addition to our knowledge of the period.

From a scientific point of view, what the volume lacks most, of course, is comparative material, for Sir Aurel Stein, ardent archaeologist though he be, is a real student of not one of the many periods explored on his expedition. The fact is frankly admitted by the author, who announces on the title page that the antiquities are examined, described, and illustrated with the assistance of F. H. Andrews, and who calls on the aid of friends for the discussion of points of particular interest, for example on M. N. Tod for a note on the inscription of Heracles and on Cumont for the significance of the cult of Heracles as mounted archer. There is probably no single archaeologist competent to discuss adequately all the periods; yet some further armchair investigation is required to put the discoveries in proper perspective and even to give them the importance due.

[1] *Annals*, XIII, 12.

My own especial interest lies in the Parthian period, remains of which loom large in the present volume, and it seems worth while to call attention to some of the particular features of this epoch and leave to others the pleasure of stressing the importance of finds in other fields. Parthian burials were commonly stone-covered cairns similar to burials of the chalcolithic period. Previous exposure of the body is indicated by the incomplete skeletons in unrifled graves. Similar tombs found at Irzi by the Yale expedition at Dura-Europos show a very widespread use of this particular custom in the Parthian period. There were no tower tombs, but the large late-chalcolithic cairn [2] whose remains still rise in three tiers to a height of fourteen feet, and contain eight recesses, seems a long step in that direction. The scarcity of purely Parthian remains in ancient Persis is not unexpected, but the fine series of Parthian monuments along the west border of Iran between Persis and Lake Urmia forms a quite startling and most welcome addition to our knowledge of Parthian culture. It is most interesting to note that in the great series of Parthian sculptures at Tang-i-Sarwak, half way between Shiraz and Susa, frontality is the rule. Even without the Parthian inscription there would be no hesitation in assigning the reliefs to the Arsacid period on the basis of frontality and the narrow diadems. The arrangements of the hair, in large puffs over the ears or curving evenly over the head, follow the usual Parthian practice, but the trousers, falling full to the ankles, differ sharply from the type at Palmyra and Dura, which tapers below the knee. The full trousers seem to belong to southern districts, for they appear on the bronze statue of Shamī, on the figure of an unpublished graffito from Seleucia and at the beginning of the Sasanian period at Kūh-i-Khwādja.[3]

[2] A. Stein, "An Archaeological Tour in the Ancient Persis," *Iraq*, III (1936), 158.

[3] E. Herzfeld, *Archaeological History of Iran* (London, 1935), Fig. 10.

The knee length coats can be paralleled in the reliefs of Assur.[4] Most welcome is the relief of the cataphract in full panoply. The quiver retained behind the saddle in spite of the long spear argues a rather early representation. Unique are the two little figures above the butt-end of the spear. Sir Aurel Stein recognizes another mailed horseman with lance (p. 108) in the figure charging a rampant lion. The relief is much weather-beaten (Fig. 35) and the armor is not too clear, but the weapon looks more like a sword than a lance. A similar figure of a horseman striking down a charging lion with a sword is found in the famous Sasanian plate of Bahram V now in the British Museum.[5] Once more we see how many of the Sasanian motifs were taken almost direct from the Parthian. The reclining figure (Fig. 30) seems to hold a patera in the right hand rather than a wreath or a crown. The arrangement of seated and reclining figures suggests the ritual banquet scene well known in Palmyrene reliefs and Dura paintings. I can offer no parallels to the most interesting figure (Fig. 36) raising his hand toward the conical stone set on a high altar, and bound with diadem-like ribbons. Sir Aurel Stein suggests it is a baetyl (p. 109).

The great bronze statue from Shamī is the finest Parthian statue yet recovered, and I see no reason for regarding even the head as modeled "in unmistakably Hellenistic style" (p. 131). The wide eyes with prominent lids and centrally placed irises, the strong regular features, and the stylized hair form the sharpest possible contrast to the individualistic treatment of the Hellenistic king found in the same sanctuary. The costume is paralleled almost exactly by the dress of a warrior on a relief from Assur.[6] The missing left hand of the figure almost certainly rested on the hilt of the sword, as in the Assur relief. The

[4] W. Andrae and H. Lenzen, *Die Partherstadt Assur* (Berlin, 1933), Pl. 59 *a* and *c*.

[5] F. Sarre, *Die Kunst des alten Persien* (Berlin, 1922), Pl. 104.

[6] Andrae and Lenzen, *op. cit.*, Pl. 59 b.

whole figure breathes the strength and aloofness born in part of a sense of balance and pattern which is the essence of oriental art both in Mesopotamia and India.

The rectangular enclosure which sheltered statues and altars was obviously established before the Parthian period, as Sir Aurel Stein remarks, since parts of a large bronze statue of a Hellenistic king, tentatively identified as Antiochus IV by Rostovtzeff[7] were also recovered. The form, however, with the central portion left open to the sky and a roof along the sides supported on a colonnade is not Greek and may go back to an Achaemenid hypaethral type.

Very valuable contributions, indeed, are the careful study and detailed plan of the caves of Karafto, identified as the sanctuary of Heracles of which Tacitus makes mention. Heracles in the Iranian tradition was ordinarily identified with Verethraghna. As mounted archer, Sir Aurel Stein suggests he may also be related to Mithra. This is tempting, and Cumont (p. 343) points out the monuments picturing Mithra as a mounted archer, but the inscription dated by Tod at the end of the fourth or the beginning of the third century B.C. places the cult in rather an early period for Mithra, and there is no proof that the sanctuary originally was Iranian in spite of its proximity to Takht-i-Sulaimān. On the other hand there was a widespread cult of a mounted god in Thrace, Asia Minor, and Syria, and in Parthian times if not before, the god appears as a mounted archer. In Syria he appears under the title of Genneas and in Palmyra is the astral divinity Arsu or Azizu.[8] Apparently, a similar god is depicted in the gold plaque from the Glinishche tomb at Kertch.[9] It is quite possible, therefore, that the sanctuary originally belonged to a mounted god to whom as local hero the Greeks gave the name of Heracles. Naturally, the Iranian tradition influenced the local cults, particularly in Parthian times.[10]

Sir Aurel Stein calls attention to a graffito of a mounted archer scratched in a later hand over the right-hand end of the inscription. In the photograph the mount is not clear, but the archer and bow seem distinct and in the middle of the inscription is a crude drawing of the horned quarry. Incidentally, the mention of "woods" in the account of Tacitus is interesting in view of the bare aspect of the hills today. Many of the barren hills of western Iran were undoubtedly forested in Parthian times.

The Parthian material alone in the present volume forms an addition of the utmost significance to our knowledge of ancient Iran. The Sasanian and Muhammadan monuments are of almost equal importance and the chalcolithic material is of exceptional value. In the chalcolithic field, however, the scholar will object to the slighting, not to say neglect, of mounds with unpainted pottery in favor of those with shards of more artistic qualities. The plates of the volume profit, but at the expense in the volume as a whole of a more accurate knowledge of the historical development of the region.

It is easy to point out minor faults in any volume. Thus, in the present book Marcus N. Tod's name is spelled with a double *d*, and there is a slight variation in spelling of Tang-i-Sarwak between map and text. The photographs, plates, and drawings are in general excellent, but the important sealing from Hasanlū dated in the fifteenth century B.C. deserves a better photograph than appears in Pl. XXVI, 17, or failing

[7] M. Rostovtzeff, *The Social and Economic History of the Hellenistic World* (New York, 1941), I, 66.
1941), I, 66.

[8] H. Ingholt, *Studier over Palmyrensk Skulpter* (Copenhagen, 1928), pp. 44–47; F. Cumont, "Un Dieu syrien a dos de chameau," *Syria,* X (1929), 30 ff.; *Excavations at Dura-Europos* (New Haven, 1939), VII and VIII, 167, n. 15.

[9] E. H. Minns, *Scythians and Greeks* (Cambridge, 1913), p. 434.

[10] See the discussion in *Excavations at Dura-Europos* (New Haven, 1936), VI, 228 ff.

that, demands a hand drawing. The index will be much appreciated by every student.

Sir Aurel Stein deserves the most sincere congratulations on the success of his journey and the gratitude of all who are interested in Iran ancient or modern for his splendid surveys of this far too little-known country. The keen interest exhibited in all phases of Iranian history, the abundant photographs, and not least the rapid publication of results will make his work a landmark in the study of Persia.

CLARK HOPKINS

Al-Iklīl, al-Djuz' al-Thāmin of al-Hamdāni. Ed. by Nabih A. Faris. Princeton, 1940. Pp. xii + 247, 3 figs., 1 map. $5.00. Trans., *The Antiquities of South Arabia.* Princeton, 1938. Pp. 119, 3 figs., 1 Map. $2.50.

This translation and, to an even greater extent, this edition of the text of al-Hamdānī's *magnum opus,* marks a notable step forward in our knowledge of Arabic literature dealing with pre-Islamic South Arabia. This does not mean that there is nothing remaining to be done on this book of the *Iklīl,* for there can be no doubt that many scholars will have to make their contribution before the last possible bit of meaning has been wrung from the unusually difficult and frequently corrupt manuscript tradition of this work.[1]

For the benefit of the nonspecialist who may wish to consult this translation, a few remarks on its general character may not be out of order. It should be said that while it contains a good deal of valuable archaeological, onomastic, and topographical material, it is much less reliable historically and must be used with the utmost circumspection. Both al-Hamdānī and to a much greater degree his redactor, Ibn al-Kalbī, attempt to strengthen the tenuous connection between persons and places by interpolating "historical" incidents and "archaeological" material which are for the most part of literary or legendary origin. For example, in the section dealing with alleged tomb finds in South Arabia, stock descriptions of these discoveries are pressed into service again and again and are of a stereotyped character well known to all readers of the *1001 Nights* and other Arab romances. A case in point (trans., p. 88) is the story, introduced by Ibn al-Kalbī, in which the narrator escapes from a tomb cavern via a passage leading to the sea, where he is rescued by a passing vessel. Those familiar with the *Nights* will recognize this as one of the episodes in the fourth voyage of Sindbad, and apparently a favorite traveler's tale of the tenth century. To such sources as Wahb ibn Munabbih and Ka'b al-Aḥbār we must look for the authorship of certain incidents in Yemenite history which are patently dependent on Jewish tradition. Thus (text, p. 101, omitted in trans.), the fall of Yemenite civilization is laid to the *Schrecklichkeit*-policy of Nebuchadrezzar.[2] Again, in the statement that just before the appearance of the Yemenite Messiah "the mountains will be made lower than the plains" (see note below to p. 70) we have a quotation from Isaiah (40:2). The story of Jephthah's daughter[3] reappears in a slightly altered form in the recital of the adventures of Ḥassān ibn Tubba' (trans., p. 51; text, p. 71).[4] Another example, which could be multiplied, of the occurrence of floating legends in

[1] The problem of the character of al-Hamdāni's work and its manuscript tradition is well dealt with by G. L. Della Vida in his review of Faris' translation (*Orientalia,* IX [1940], 160–73), to which frequent reference will be made in the course of this review.

[2] Cf. II Chron. 36:17 ff.

[3] Judg. 11:30 ff.

[4] This motive reached England apparently in the Crusading or post-Crusading period and still survives there in the legends of the Worm of Lambton and the Dragon of Sockburn, for which see W. Fordyce, *The History and Antiquities of the County Palatine of Durham* (Newcastle, London, and Edinburgh, 1857), I, 510-11, II, 628; and *Time Mag.,* XXXVII (1941), 26.

the *Iklīl* is the story of the chains and bells which were used to inform the king of Ẓafār of the arrival of visitors (text, p. 27; trans., p. 23). In the original legend, as repeated by Niẓām al-Mulk in his *Siyāsat-Nāma*,[5] the chains and bells were attached to the palace of Khusraw I Anūshirwān, and were the means by which anyone suffering from injustices could draw the attention of the king to his case. It would have been worth while from a literary historical standpoint if this type of material had been more fully pointed out in the footnotes.

From the Western point of view the meat of al-Hamdānī's work lies in his descriptions of the architectural monuments of the Yemen. What al-Hamdānī reports as having been seen with his own eyes can usually be considered as reliable, but accounts attributed to other informants must be treated with the utmost reserve. It is apparent from the translator's copious footnotes that he is thoroughly familiar with the Arabic sources referring to the geographical and genealogical material. On the other hand, much less use is made of European works, although there are numerous articles and books by Rhodokanakis, Mordtmann, Mittwoch, and others, not to mention the travelers' and explorers' reports published in the last few years, which could frequently to great advantage have been used to elucidate the text.

Finally, there is the question as to whether the translation of a work of this type might not be better accomplished through collaboration rather than by one scholar working entirely on his own; this policy has been followed by Ritter and his colleagues in Istanbul and has resulted in the production of some very fine text editions. It would have been highly desirable, for example, if there had been a more adequate treatment of the Himyaritic passages, which are certainly capable of further interpretation. In a number of instances passages have been inaccurately translated owing to lack of familiarity with technical terminology, principally astronomical, architectural, and geological. The English is on the whole very good, but there is some confusion in the rendition of the tenses, particularly the future conditional (for simple future) and past perfect (for perfect). The sphere in which the translator undeniably excels is in the rendition of the poetical portions of the work. While preserving the meaning and flavor of the Arabic original, he turns it into smooth and polished English verse with a great deal of force and charm. That this in itself is no mean accomplishment can be judged from the number of orientalists who have in the past attempted this difficult task with very indifferent success.

One can only wish that all translations and editions of Arabic texts could boast the well-planned format, excellent printing, and careful proofreading to be found in these two volumes. It would have been a distinct advantage, however, if the translation had included cross references to the pagination of the text, but this was apparently impossible owing to the exigencies of publication.

The following list of corrections and emendations is suggested:

Text, p. (ب), l. 17: *for* الهَّمداني *read* الهَمْداني

p. (ﺯ), l. 16: *for* ففلعت *read* ففعلت.

Trans., p. 8, l. 29: *for* proportions *read* lays out.

Trans., p. 9, l. 8: *for* thicket in the field *read* on the thicket. *After this sentence add:* When it alighted on the field of Ghumdān, Shem thus learned . . .

l. 12: *after* tradition *add* handed down from master to master.

l. 14: *for* as well as Venus and Mars *read* in conjunction with Venus and Mars.

Trans., p. 9, ll. 16–18: *for the sentence begin-*

[5] Ed. and tr. Schefer, text, 36 f.; trans., 52 ff. See A. Christensen, *L'Iran sous les Sassanides* (Copenhagen, 1936), p. 372.

ning The edifice . . . *read* The solidity and permanence of its materials and the endurance of its foundations are such that this castle [*burdj*] has survived the reigns of many kings, or a period of about 4000 lunar years.

p. 10, ll. 13–14: *after* al-Baṣrah *read* 'and then Ṣan'ā'; there will elapse a period of a few months less than forty years between the destruction of the two.' And it happened almost as he had predicted.

l. 28: *for* zest *read* emotion, *after which add* singing.

p. 11, l. 1: *for* hair *read* clothes.

l. 14: *read* clothes of wool and silk.

l. 26: kuttān is a kind of red ant (Salmoné).

p. 13, ll. 33–34: these two lines are a repetition of the preceding couplet.

p. 14, ll. 13–14: *translate:* In truth our blades their heads shall reap
With mighty swaths,
for the royal feast.

p. 18, l. 19: *read* teak and ebony woodwork.

p. 19, ll. 3–4: *for* curtains embroidered with bells *read* curtains to which bells are fastened.

p. 20, l. 21: *for* silver (فضّة) *read* plaster *or* stucco (قصّة).

p. 21, l. 5: *for* book *read* inscription.

l. 6: *for* which are scattered around the villages of al-Bawn *read* in Qā'ah, one of the villages of al-Bawn. Cf. p. 60, l. 13.

l. 11: *for* Tulfum, Raymah *read* Tulfum in Raydah. Cf. p. 37, l. 5.

p. 22, l. 5: *the omitted words* (text, p. 25) *read* and approximates it more closely than the place where the *m* is pronounced. Al-Hamdānī here has put the cart before the horse; the form Tulfum>Tulthum before *m*.[6] This name is further discussed on p. 103 of the text, where it appears that the Arabs regarded the pronunciation Tulfum as "foreign" (*'adjamī, i.e.,* against the prevailing phonetic configuration of the time) and "corrected" it to Tulthum.

l. 6: *after* men *add* of the Yamanites.

l. 9: *read* because of the pre-eminence of the jinn in the arts and crafts.

l. 12: *this verse should be translated* shrines, images, buckets as big as saddle-bags and firmly-anchored pots.

Text, p. 27, l. 5: *read* يسكنان as on trans., p. 23, n. 114.

p. 29, l. 19: *for* شدرا *read* شذرا.

Trans., p. 26, l. 11: *for* precious *read* matched (*tu'āman*).

l. 12: the first sentence should be a section heading.

l. 13: *delete* especially.

p. 28, ll. 18–20: *read* He who enters Ẓafār should speak Himyarite.

l. 22: *after* 77° *add* West Longitude.

Trans., p. 29, l. 5 ff.: the site of the historical Iram has been identified with that at Djabal Ramm, about twenty-five miles due east of Aqaba, Transjordan, by Père Savignac. See my "Koranic Iram, Legendary and Historical."[7]

p. 31, l. 13: *for* wax *read* candles (anachronism).

[6] See C. Brockelmann, *Kurzgefasste vergleichende Grammatik der semitischen Sprachen* (Berlin, 1908), p. 106.

[7] *Bull. Amer. Schools of Oriental Research,* No. 73 (1939), 13–15.

p. 33, ll. 1–3: *read* This is similar to the rules governing an eclipse: it cuts off [the light] only from the region in which it is visible, but as long as it is not seen it has no influence or effect.
l. 23: *for* deep *read* extensive.

p. 34, l. 16: *after* earth *add* by the streaming water.
l. 21: *for* villages *read* estates *or* gardens.
l. 23: *for* openings *read* sluice-gates.
l. 24: *after* flowed *add* of its own accord.

Trans., p. 35, ll. 2–3: *for* and here and there a lote-tree *read* and a few lote-trees.
ll. 15–17: *read* The dam was supported by a wall, and the remains between the buttresses of the storage-tanks consist of great stone walls, the foundations of which are bonded together with bronze [dowels].

p. 36, l. 8: omission of following verses should be indicated.
l. 12: *read* The columns of the lower story are standing to the present day.
l. 13: *for* number of men *read* tribe.
l. 14: *for* will *read* would; *for* hole has *read* holes have.
l. 15: *read* each column [*not* colonnade, see *above*, l. 12]; the base was then set in place and molten bronze poured between the two.
l. 17: *section heading* Qaṣr Ṣalḥīn *omitted.*

p. 37, l. 2: *after* Ṣalḥīn *add* alone.
l. 3: *read* And we built Ṣirwāḥ, Marāḥ and Baynūn in . . . [text garbled], Hind and Hunaydah and seven fortresses in Qā'ah. (Ḳā'a is the name of a place, see trans., p. 60, and Della Vida.[8])
l. 6: *for* Baynūm *read* Baynūn.
l. 14: *for* seventy *read* seventy-seven.
l. 17: *read* and they shook off the yoke of the king of magicians [*i.e.*, Solomon].
l. 25: *for* spent their days *read* divided their time.

p. 38, l. 3: *for* Raydān Ẓafār *read* Raydān of Ẓafār.

Text, p. 51, l. 9: *for* بتجارته *read* بنجارته.
p. 52, l. 1: *for* اقدام *read* اقدام.

Trans., p. 38, ll. 15–16: *read* It had jointed pavements of flagstones, of which the centers were worn by the age-long trampling of feet and hoofs.
l. 19: *after* 295 *better insert* [A.D. 907–8].

Trans., p. 39, l. 20: *for* marble *read* blocks of cut stone [*balāṭ*].
l. 21: al-Qayl *should be translated* chief *or* king. The vocalization Ma'āhir is correct as against the Mu'āhir of the text.[9]
l. 22: *for* tongue *read* characters.

p. 41, l. 5: *after* tribes *add* some of whom erected buildings there.
l. 6: *for* ibn-Murāthid *text has* Ibn Dhi-Murāthid.
l. 14: *for* Rā'ish *read* Rā'ish.

p. 42, ll. 4–6: *after* north *read* in the fortified area farther down was one called al-Maṣna'ah, while below it, midway in the lower pass, was a great castle.
l. 16: *for* will *read* would.
l. 18: *for* districts *read* ruin-fields [*māthar*].
l. 24: *after* Fārisi *insert a comma.*

Text, p. 61, l. 13: *for* ماءة *read* مياهه.

Trans., p. 43, ll. 16, 17: *for* sultan *read* ruler *or* government.

[8] *Op. cit.*, p. 167.

[9] *Ibid.*, p. 173.

ll. 19–20: *after* sultan *read* but if he had not been immune in taking this action he would have been crucified.

ll. 21–24: *read* In the Jāhilīyah this stream was twice its present size, until there occurred earthquakes in the Yaman which cut off some of its waters, as some people say.

p. 44, ll. 1–3: *read* Its waters were in charge of dhu-Jahnaf ibn-dhi-Ma'-dhin, in order that he might dam them up, but as this stream diminished so did his fields and vineyards, including the vineyards of 'Alamān and 'Ushar.

l. 12: *for* that of Ẓafār *read* Raydān of Ẓafār.

ll. 13, 14: palaces [*ḳuṣūr*] *here should be* pavilions *or* mansions.

Trans., p. 44, ll. 15–21: *read* court surrounded by booths [*dakākīn* here does not equal "shops"] [built of] cut stone, in which were sections used as resting-places for the chieftains. . . . At either side of each of these were two raised sections for the two men who stood at the head of the chieftain, resting on one foot and holding drawn swords.

l. 23: *for* marble *read* stone slab.

p. 45, l. 14: *for* QFH *read* QFḤ. (The latter may be a wrong pointing for FḲḤ, cf. North Arabic *faḳaḥa,* "blossomed, flowered." This line corresponds to n. 33, not body of text on p. 64.)

ll. 15–17: As Della Vida[10] said, this is a gloss, not a translation of the preceding. *Read* FḌḤ "sprouted," is said of vines; NFḤ means "the cutting-down of its thorn-bushes"; FLḤ means "to till the earth," so he called it Muftalaḥ.

[10] *Ibid.,* p. 169.

ll. 18-20: this sentence should conclude the preceding paragraph.

ll. 27–28: *for* unshrunken *read* greasy.

l. 28: *for* white *read* bleached.

p. 45, last line, –46: *read* In Ḍahr is a high, sheer, and lofty mountain-castle which cannot be reached by climbing.

p. 47, ll. 2–4: *read* he used to do homage to it by placing the palm of his hand under his chin so as to cover the latter, after which he would touch his chin to the ground before it.

ll. 19, 22: *for* ibn-Ḥubāb *text has* Ibn Djanāb.

p. 48, l. 8: *after* Tukhla, *insert* or.

l. 5 ff.: *these pre-Islamic* mosques *should be called* shrines *or* sanctuaries.

Trans., p. 49, l. 2: *for* a tradition to that effect has been cited *read* a story is related concerning this (*i.e.,* and thereby hangs a tale).

l. 4: "Masjid al-Ukhdūd," referring to the site of the massacre of Nadjrān Christians mentioned in Koran 85.

p. 50, ll. 10, 11, 13: *for* valley *read* stream (*ghail*).

p. 51, l. 20: *for* confiscate *read* consume.

p. 52, l. 12: *for* Little . . . has survived *read* . . . , and some of it is still standing.

Text, p. 79, l. 14: *for* بأرم *read* بإرم.

Trans., p. 53, l. 2: *for* founded *read* restored (*ṣaḥḥaḥā*).

Text, p. 83, l. 4: *for* صحح *read* صححا : the preceding subject is dual.

Trans., p. 53, l. 17: *for* [tribes] *read* [tribe].

p. 54, l. 7: *for* throne *read* roof (*'arsh;* this word has been frequently mistranslated.)

p. 55, ll. 6–7: al-Shibāmi *is* الشَبا مي *in text* (p. 86, l. 1).

l. 9: *for* to its right *read* to the south of it (*yamāniya* = "south").

l. 15: *read* Yafīq, with a *y*, is still another place, situated in dhu-Ru'ayn.

p. 58, l. 3: Kisra *should be translated as* Chosroes.

l. 11: *for* at their death *read* when they dispersed. (The next sentence shows that Nashḳ did not die out, but merely moved elsewhere.)

l. 16: *text reads* and that of Bayt Zuwad, which the Himyarites called either Zayd or Zuwad.

p. 59, following l. 10 the following interesting philological note to the preceding verse is omitted in the translation: "*ḥawālā* is an expression peculiar to Hamdān, and means 'near' (*jiwār*). You say: *ḥull ba'īrāk wa-khudh* dīnārāk for *ḥull* ba'īraka wa-khudh dīnārayka." The author is trying to illustrate the dropping of case endings in the Hamdān dialect.

p. 59, l. 14: *for* length *read* height.

ll. 17–18, p. 60, l. 2: *instead of* Yashḥum *the reading accepted in the text* (p. 93) *is* Yasḥum.

p. 61, l. 4: *for* palaces *read* ruins (*māthar*).

Text, p. 95, l. 4: مُشَعَّب repaired, *is more likely than* مُشَعَّث, badly cracked (??).

Trans., p. 61, l. 7 ff.: *read* the faces of its walls, both inside and out, are of cut stone; [the joints] have been finished off with the trowel, leaving no division at all visible between the stones, so that . . .

ll. 11–13: This passage has been entirely misunderstood. *Read* In it you can see what served as the water-supply of those palaces [or pavilions]: water cisterns, with some of the tall stone columns lying beside standing square ones which are ten-odd cubits in height.

l. 17: *for* longer *read* taller.

l. 19: *delete* [of marble].

l. 20: *read* . . . moon, which face the king . . .

l. 19: *delete* [of marble].

reappears again on pp. 46–47.

l. 28: *for* spring *read* well (*bi'r*), (both times). ll. 27–28 *should be translated:* Of all the castles of the Yamanites, there is none which has a well at the foot of its mountain save Tulfum.

p. 62, l. 6: *for* Zuwayri *read* Zuwayri'.

l. 13: al-Qayl *should be translated* the chieftain, *or* the king.

l. 26: after this the text relates a story laying the destruction of Yemenite civilization to Nebuchadrezzar (text, p. 101).[11]

Trans., p. 63, last line: After this the text (p. 103) has the following note: "Its name was [originally] Talf, to which *mā* was added, making Talfmā; the *ā* was then dropped, giving Himyarite Talfam [not Tulfam], like Ma'dhinam and Ri'āmam for Ma'dhinan and Ri'āman. This form was lightened to Tulfum. The Arabs considered this as foreign, and so called it Tulthum, with a *th*." See above, n. to p. 22, l. 5. The author seems to recognize the equivalence of the mimation to the nunation, but does not realize that the difference in these forms is merely that between the accusative and the nominative case endings. This section should

[11] Cf. II Chron. 36:17 ff.

by all means have been included in the translation, since it gives an idea as to the state of Ibn al-Kalbī's (to whom it is to be attributed) knowledge of the Himyarite language.

p. 64, l. 6: after this line *insert the section heading* The Castle of Tubba'.

l. 7: *after* Tubba' castle *place a period.* The castle of Aklub *should be a section heading.*

l. 9: *for* Kamna *better* Kamnā (كمنا, *not* كمنىَ).

l. 15: *Text* (p. 105) *has* city (*madīna*) of Rayshān, *not* mount *as in translation or* land (*balad*) *as in* trans. n. 4.

l. 18: Reading accepted in text is al-Da'lānī instead of al-Dālānī.

p. 65, l. 13: *for* spring *read* source.

Trans., p. 66, ll. 19–21: *read* This place is among those which have not been mentioned by learned men, and no doubt there are in this region many similar sites which are scattered about and have fallen into oblivion.

ll. 22–23: *for* (and I attribute this information to him) *read* for I had mentioned this story [i.e., the preceding one] to him, *not* I already related this information of his (as suggested by Della Vida.[12]) The text has و قد ذكرت له هذا الخبر, whereas Della Vida's translation requires و قد ذكرت هذا الخبر له.

p. 67, l. 2: verses omitted after this line should be indicated.

l. 23: *for* valleys *read* passes (*ma'zimain*).

p. 69, ll. 9–10: *read* As for the streams of the Yaman, this is not the place to discuss them.

p. 70, l. 2: *for* Khuta *better* Khutā (ختا).

l. 11 ff.: I do not feel that either Faris or Della Vida[13] have successfully grasped the meaning of this prophecy. I should propose to read "... who will be preceded by a man of his people [who will] appear to be [text, p. 118 should read كأنّه instead of كأن به] walking before him in fear [Della Vida O.K.] and humility, quick to obey him and executing his commands; by him the mountains will be made lower [correct تذال to تذلل] than the plains."[14] The rest of the passage is indeed obscure.

l. 20: *for* Ḥāwi *text* (p. 119) *has* Khāwin.

l. 23: "al-Jabal al-Ashyab" should be translated. It means "Gray (or hoary) Mountain."

Trans., p. 70. ll. 5–6 (text, p. 118): While Della Vida's[15] translation "circle" for *dāra* is an improvement over Faris's "house," it needs further explanation in order to render the true import of the passage. The "circles" here must be the remains of the abandoned circular terraces where cultivation at one time was carried on. How these terraces are built in the Djibāl region of the Yemen is described by C. Niebuhr.[16]

Text, p. 120, l. 1: *for* جبا *read* ختا (trans., p. 71, l. 10).

[12] *Op. cit.*, p. 170.

[13] *Ibid.*, p. 171.

[14] Cf. Isaiah 40:2.

[15] *Op. cit.*, pp. 170–71.

[16] *Description de l'Arabie* (Copenhagen, 1773), pp. 137–38.

Trans., p. 71, l. 23: *for* quake *read* the first blast of the trumpet on the Day of Judgment (the word *al-rādjifa* [text, p. 120, l. 8] has this meaning).

p. 72, l. 1: *for* hurricanes . . . *read* wind erosion and the trampling and kicking of beasts of burden.

Text, p. 120, l. 10: دعق in note 38 is correct.

l. 13: *for* راجغ *read* راجع.

p. 121, l. 1: *for* دحقها *read* دحضها.

Trans., p. 72, ll. 2–4: *read* The eighth will be brought forth by ants from Iram when the Giants [i.e., the legendary ancient heroes] have disappeared and the arrogant Pharaohs are no more.

l. 12: *after this, insert section heading* The Sacred Mountains. *For* great and holy *read* holy and venerated.

p. 73, l. 8: *after* WYRM *the following has been omitted:* The medial *alif* has disappeared and the *wāw* has elided with the *ḍammah* over it.

p. 74, l. 6: *text has* ninth *instead of* seventh volume. See trans., p. 7.

p. 75, l. 5: *for* landslide *read* sinking of the ground.

l. 8: *for* gold-laced *read* brocaded.

l. 9: *for* a silk bed-cover embroidered with gold *read* a gold-embroidered coverlet.

l. 18: *for* rivals *read* resembles.

l. 23: *for* which a landslide had uncovered *read* which had become uncovered.

l. 24: *for* When he laid it open, the door led into a vault *read* When he opened the door he found a vault.

l. 25: *for* garments *read* overgarments; *for* and gold-embroidered robes *read* over which were embroideries and brocades.

p. 76, l. 11: *for* Da'ām *read* Di'ām.

p. 77, l. 1: *for* the Royal Necropolis *read* a Royal Necropolis.

l. 8: *after* a series of shelves *add* arranged one above the other.

Trans., p. 78, ll. 3–4: *after* engulfed us *add* and its odor was more loathsome than poison; it began to sear our nostrils and brains and caused every man of us to believe that his hour had come.

l. 15: for *al-ḥiqab* the text (p. 129) has *al-ḥukb*.

p. 79, ll. 20, 26–27: *for* wind - curved sandhills *read as a proper name,* al-Aḥqāf.

l. 23: *after* young men *add* of the tribe.

p. 80, l. 3: *for* Messenger *probably* Apostle *would be more suitable.*

l. 7: *for* al-'Ūwah [al-'Uwwa] text (p. 134, l. 3) accepts the reading al-Fuwwa.

ll. 11–12: *for* stretched out *read* shrouded (*musadjdja*).

Text, p. 134, l. 9: *for* القيمة *read* القيامة.

Trans., p. 80, l. 30 and p. 81, l. 1: *for* fire of the ditch *read* ditch of fire.

p. 81, l. 1: *for* self-destroyed *read* slain.

l. 8: *for* Dībajah *read* Dībājah.

l. 21: *for* Prophet *read* Apostle (*rasūl*).

p. 82, l. 9: *for* prophet *read* apostle.

l. 25: text (p. 137, l. 9) has Aḍru'a instead of Aḍra'ah.

p. 83, ll. 1–2: this rendering is relegated to the footnotes in the text (p. 137, l. 10), where the names are read "Djamad, Mishraḥ, Mikhwas."

p. 84, l. 25: *for* prophet *read* apostle.

Text, p. 141, l. 9: *for* اومن *read* آمن.

Trans., p. 87, l. 1: *for* wind-curved sand-hills *read* al-Aḥqāf (*a proper name*).

l. 25: *for* best *read* most beautiful.

p. 89, l. 14: *for* pure oil or tar *read* pure olive or other oil.
l. 15: *for* a vessel *read* a globe.

Trans., p. 91, l. 22: *read* What we laid up for the next life we have now found; what we consumed [during our lifetime] we have enjoyed, but what we have left behind is a total loss.

p. 92, l. 6: *for* spade *read* mattock.
ll. 6–7: *for* a sealed iron coffin *read* an iron coffin sealed with rivets.
l. 10: *for* decayed *read* desiccated (*māḥil*).
l. 11: *for* Junaydah, etc., *text* (p. 148) *has* Djunāda ibn al-Djunaid.
l. 20: *for* a sword whose scabbard was of gold *read* a sword ornamented with gold. Cf. p. 93, ll. 3–4.
l. 28: *for* gold-lined *read* overlaid with gold.

p. 93, l. 11: *for* surged over . . . *read* dug away a certain spot and revealed.
l. 12: *for* marble *read* variegated marble.
l. 17: *read* In thy name, O God, Lord of Himyar.

p. 94, l. 12: *add* . . ., and on a tablet near his head was written [poetry].
l. 27: *for* his back *read* him.

p. 95, l. 10: *for* completing our plans *read* when we had laid out the site.
l. 11: *for* some masonry *read* sarcophagus.
l. 17: *a better translation would be* one of those who have lived to an extraordinarily great age *instead of* longevous men.
l. 18: *translate* Kisra *as* Chosroes.
l. 20: *for* buttresses *read* battlements (*sharafāt*).

p. 96, ll. 17–18: *for* Thereupon the young men spread the report among the community . . . *read* Thereupon the people of that place realized that a girl had been born [in that house].

Trans., p. 97, l. 5: *after* Wahb ibn-Munabbih *add* the Yamanite.

Text, p. 156, l. 7: *for* فكشعت *read* فكشفت, as in n. 5.

Trans., p. 97, l. 27: *for* throne *read* bier.

p. 98, l. 3: *for* the flocking visitors *read* for those who visit us.

p. 99, l. 1: *for* Qubbar *text* (p. 160) *has* Ḳīn, *but* Ḳbr in n. 15.
ll. 6–7: *for* was explored *read* had been found.
l. 21: *for* whose discourser he was *read* who used to spend the night talking with him. (*Musāmir* [text, p. 161, l. 13] means "a person who talks at night.")

p. 100, ll 24–25: *for* my enemies would wreak their malice on me *read* my enemies would rejoice.
l. 26: *for* enmity *read* blood-revenge (*dhaḥal*, text, p. 162, l. 18).
l. 28: *for* jewels [of all sorts], emerald *read* pearls, rubies. *Djawhar* (text, p. 163, l. 1) can mean either "jewels" or "pearls" (the jewel par excellence), but the latter is indicated here because the text goes on to mention a specific type of jewel, i.e., *yāḳūt*. This last includes any precious form of corundum, such as the ruby, the sapphire, and the emerald, but when the word is unqualified by the appropriate color it usually refers to the ruby. The emerald is commonly called *zumurrud* in Arabic.
l. 30: *for* upon his head *read* at his head.

Text, p. 167, l. 7: *for* نابث *read* ثابت (trans., p. 103, l. 8).
Trans., p. 103, l. 28 ff.: See Della Vida.[17]
p. 104, ll. 2–3: *read* he found in it a shrouded corpse, beside whose head. . . .
p. 105, l. 15: *for* bracelet *read* armlet.
l. 16: *for* two of oriental topaz *read* two bracelets of oriental topaz.
Text, p. 171, l. 12: *for* (۴۲) *read* (۴۴).
Trans., p. 105, ll. 31–32: *the inscription should be translated* I was hindered by my power and led astray by my prosperity.
l. 32: *for* flare of life *read* glitter of the world.
p. 106, l. 26: *for* spade *read* pickax (*miʿwal*).
l. 32: *for* whose sore foot was dug up *read* whose leg was turned up by the shovel (*mashā*).
p. 107, l. 3: for "banū-Hāshim" the text (p. 173, l. 5) has Banū Hiŝhām.
l. 5: *for* banu-Wurayq *read* banu-Zurayq.
p. 108, l. 12: *for* with thick hair on his head *read* and deeply bronzed (*ŝhadīd al-udma,* text, p. 174, l. 11).

HAROLD W. GLIDDEN

Ṣafawid Rugs and Textiles. The Collection of the Shrine of Imām ʿAlī at al-Najaf. By Mehmet Aga-Oglu. New York: Columbia Univ. Press, 1941. Pp. xiv + 60, 14 figs., 28 pls. $7.50.

The saints of many creeds have always attracted to their shrines gifts of things beautiful and valuable, often hiding them jealously from human eyes and hands and so preserving them for the joy and admiration of posterity. In textile art especially, knowledge of the evolution of design and technique would be woefully limited were it not for the pious custom of the devotees of long ago to donate the finest fabrics of their day to a revered saint's abode. The present volume describes the textile treasures of one shrine, the tomb of Imam Ali at al-Najaf in Iraq.

In 1934 Dr. Mehmet Aga-Oglu was delegated to represent the University of Michigan and the Detroit Institute of Arts at the celebration of the millennial anniversary of Firdausi. As he was an adherent of the Shiah he was granted permission to investigate the sanctuary, which had never before been visited by an art historian.

In his introduction the author gives a précis of the ill-fated political struggles of Ali, the last of the orthodox caliphs, who died at al-Kufa in 661 A.D.; his tomb at near-by al-Najaf became, together with that of his son al-Ḥusain at Karbala, the principal object of veneration and pilgrimage of Shiism. Among the great names connected with the sanctuary are those of Harun-al-Rashid, ʿAḍud al-Dawla, Malikŝhāh, Niẓām al-Mulk, Shah Ismail I, and Suleiman the Magnificent. It has been described by many of the Arab travelers, from Ibn Ḥawḳal to Ibn Baṭṭūṭa, who in 1326 mentions especially the rich silk hangings.

Unfortunately, the expectation that beneath the golden dome of Ali's sanctuary rich treasures of offerings were preserved was unfounded. In 1801 the shrine was invaded by the puritanical Wahhabi Arabs, and only rugs and textiles escaped the looting. These may even then have been secreted in the two small windowless rooms behind the sanctuary chamber, where Aga-Oglu found them. He confines his description to the rugs and textiles of the Safawid period. A list of the post-Safawid rugs and textiles and Turkish embroideries, which he considers, probably rightly, as not of particular importance, might have been appended.

[17] *Op. cit.,* pp. 171–72.

Three complete and three fragmentary rugs are welcome additions to the repertory of one specialty of the Safawid court looms during the reign of Shah Abbas I (1587–1628), the so-called "Polish" rugs, knotted in silk and brocaded in gilt and silver thread. The author gives comprehensive descriptions and excellent analyses of these.

There is among them the largest of all known brocaded rugs, woven in two pieces which, possibly, were never sewed together (Pl. I, Figs. 2–5). The complete rug would have measured fourteen by nine and one-half meters (the Ardebil rug in the Victoria and Albert Museum measures eleven and one-fourth by five and one-fourth meters; the silk hunting rug in Vienna less than seven by a little more than three meters). With its two systems of all-over patterns, large golden arabesque bands with silver shields, polychrome floriated scrolls on a brilliant crimson ground, and its excellent preservation, it may well be "one of the sumptuous masterpieces of the period." Its appearance is especially welcome because a fragment of the companion rug, lent to the Persian Exhibition in London by Lord Aberconway, attracted much attention there. The author calls attention to the "textile" rather than "rug" pattern and gives a list both of related woven textiles and their representations in paintings.

The second rug (Pl. II, Figs. 6–10) is related in design and color scheme to the well-known rug in the Treasury of Saint Mark's in Venice. The term "woven ground" is somewhat misleading; the comparison with a woolen rug from the shrine of Imam Riḍā at Meshed, is not convincing.

Two multiple mihrab prayer rugs, one complete, one fragmentary, are very important. The complete rug (Pl. III) has three niches, the fragment (Pl. IV) still has six and one-half. In both the pattern is of knotted wool on alternating silver and gold brocaded ground. They make one regret that Karabacek did not know of their existence when he wrote his ill-fated classic.

The triple prayer rug carries the Persian inscription "Donated by the dog of this shrine, Abbas." This token of devotion to Imam Ali by the great shah is pleasing. A similar inscription, this time on plain instead of floriated background, is on the fragment of a border (Pl. V). This and a fragment of an almost identically patterned border (Pl. VI), with a small part of the adjacent field, are all that is left of two large splendid rugs. Even the mere description and the black and white illustrations make it clear that these last four rugs form a separate group. The author's suggestion that they were made by special order, for presentation to the shrine, seems plausible.

The shrine owns a representative group of brocaded silks and velvets, all but one of which are of the floral type. The exception (Pl. XI) is a poorly preserved late seventeenth-century panel of cut voided velvet showing alternate rows of standing youths holding flowers. Far more beautiful are three floral velvets. Plate VIII gives the type of floral sprays in alternate, slightly overlapping rows on silver ground; Plate IX, the double ogival lattice of interlaced floriated stems, reminiscent of blue and white Ming porcelain. Plate X is another version of the double ogive, floriated stems alternating with bands overlaid with palmettes. Pheasant-like birds enliven this remarkably beautiful fabric.

The absence of a photograph or at least a diagram of the large round cover of the Imam's tomb, "the most impressive textile item in the collection of the Shrine," is regrettable. Of the "several pieces of richly brocaded silks of various design and sizes," five are given. One of these (Pls. XII and XIII), a brocaded silver cloth inscribed Saifī-i-'Abbāsī, introduces a new weaver, possibly also the designer of this truly beautiful pattern. An ogival trellis of wide gold bands overlaid with peony-like rosettes contains

an interior ogive of floriated stems that frames a complex flower—a design that verges close on absolute perfection. Other textiles from the tomb cover include brocaded double cloths and compound twills patterned with ogival medallions (Pls. XIV and XV) or with the ubiquitous floral sprays (Pls. XVI and XVII).

Two hangings of gold and silver brocaded double cloth can be added to the small number of dated Safawid silks. One of these (Pl. XVIII), made by Ibn Ḳuṭb al-Dīn in 1626, has rightly received a very detailed description and analysis. Here again one regrets that the photographer of the Iraq Museum was not equipped to make color reproduction. The second dated hanging, of 1716, with its naturalistic rendering of floral forms, brings the list of woven textiles to a close. The analysis ends with a few pertinent remarks about the group of silks brocaded with rosebushes enlivened with birds and small animals, and the relation of Persian and Mughal textile patterns in the late seventeenth and the eighteenth centuries.

A group of embroideries seems more important to me than to the author. Only one of them, a large panel of solid velvet heavily embroidered in gold and polychrome silks with medallions and cartouches containing delightful figural scenes (Pl. VII), is professional work. On finding this magnificent specimen enumerated among the velvets one is reminded of Philip A. Means' words: "One would hardly look upon Velazquez' *Las Meninas* as a bit of well-made canvas adorned with a painted design." As far as it is possible to judge from photographs, the relation between this panel and a coat (*Fig.* 11), presented by the father of Shah Abbas I to Sultan Murad III in 1583, is so close that both may well come from the same shop, even from the same embroiderer.

Five hangings or covers, embroidered in darning stitch, are harem work (Pls. XXIV–XXVIII). The designs are adapted from woven silks rather than from paintings. I offer, as a counterpart to the Khusraw and Shīrīn cover (Pl. XXV), an unpublished late seventeenth-century embroidery of the W. R. Valentiner collection showing the visit of Lailā to Madjnūn in a desert charmingly populated by lions, rabbits, goats, wolves, and geese. The arrangement on the black ground is just as casual and abbreviated as in the Khusraw cover, yet one recognizes vestiges of great satins. The red ground center medallion and two blue ground cartouches show cavaliers of the type of the falconer in Plate XXIV; two small medallions contain standing men like those of Plate XXVI. Such a medley of motifs demonstrates the timeless advantage of the needle over the limitations of the loom. The darning covers a very thin, loosely woven cotton fabric placed on a heavier cotton; the stem stitch outlines connect both layers.

Two appendices give useful lists of Safawid weavers and dated textiles.

Ṣafawid Rugs and Textiles has been selected by the American Institute of Graphic Arts as one of the "fifty books of the year." Its attractive appearance will combine with its valuable contents to give great enjoyment to the reader of fastidious taste.

ADELE COULIN WEIBEL

Architecture Through the Ages. By Talbot Hamlin. New York: G. B. Putnam's Sons, 1940. Pp. xlvii + 680, illus. $6.00, student edition, $4.80.

Talbot Hamlin's book is a new history of architecture in one volume. It covers the whole range of buildings from the most primitive down to the most modern, relating different types of structures to the various ways of living, worshiping, and transacting business. It includes as an interlude between the sections dealing with classic and medieval architecture a short chapter on the architecture of Islam. The book has many merits which are bound to give it a wide

Fig. 1—Embroidery, Late Seventeenth Century. Detroit, Collection of Dr. W. R. Valentiner

circulation. As it is also brought out in a student edition, which is used in several colleges of the United States, the chapter on Islamic architecture, in spite of its rather limited length (pp. 193 to 210), deserves a review in this journal.

Hamlin's attitude towards Muslim architecture is sympathetic. He can only devote a few pages to the architecture of each of the leading Islamic countries, but in spite of this he makes just and graceful statements which show his understanding of the basic features. It is, however, clear that Muslim architecture is rather remote from his usual field of study. He makes too much use of antiquated literature, and he overstresses late periods. Typical examples of this are his reproduction of Coste's plan of 1867 of the Djum'a in Isfahan, which indicates the toilets, but leaves out the small dome chamber which is one of the masterpieces of Islamic architecture; and he illustrates a drawing of the "Telegrapher's House" in Shiraz which hardly deserves a place in such a short survey. Again, he points out that the Persian liwan was "an arch framed between two slender minarets," which, however, happens only in later examples; and when he quotes in the text as the only example of Persian buildings worth mentioning by name the "Pavilion of Mirrors," it is not a happy choice—first, because the little palace of late date is now demolished, and secondly because it is only a simpler version of the still standing Čihil Sutūn.

This reviewer also regrets the lack of dates which would help a student in forming a correct picture of the development. Thus, in the too short section on Persian architecture one single date is given for a specific development while the pages dealing with Indian architecture mention only a sixteenth-century date for a mosque. Of the Taj Mahal it is said that it is "somewhat earlier" than the tomb of Mahmud (read Muhammad) in Bijapur, the date of which very few readers will know. This lack of specific information is even to be found in architectural matters, as when the author speaks of the "diagonal arches to fill the corners between the circle of the dome and the corners of the room" in Sasanian buildings without mentioning the technical term: squinch. Likewise, the common term arabesque is not used when the author speaks of the abstract foliage design developed by the Muslim artists.

In a number of cases the facts given are either not specific enough or incorrect. Thus the mosque of Ibn Tulun is not characteristic of the Muslim style of Syria and Egypt as it is rather an Iraqian building in the valley of the Nile. When it is later said that the Great Mosque of Samarra is somewhat similar in spirit and that it has a similar minaret and a plan, such statements must be regarded as too vague because this building was the most important prototype for Ibn Tulun's mosque. Ḳuṣair 'Amra does not date from the middle of the ninth century and is thus not "characteristic of the luxury of the Abbasid court," an opinion held in 1907 when the building was first published by the Vienna Academy with an erroneous identification by Karabacek, soon corrected by C. H. Becker. Also, the Umayyad dynasty ruled only over the Iberian Peninsula from the middle of the eighth century on and not over North Africa. The intersection of the transept in front of the kibla wall with the center aisle leading to the mihrab is often the place for the maḳṣūra, the screened wooden box or compartment which gave protection to the worshipping ruler from attacks against his life. In the mosque of Kairouan, where this term is first brought into the discussion, the eleventh-century maḳṣūra is, however, to the right of this intersection, as is shown in Creswell's plan in *Early Muslim Architecture* (Vol. II). It is true that this particular mosque was first built in 670, but it was entirely—not largely—rebuilt by Aghlabid rulers in the ninth century. The dark voussoirs in the arches of the sanctuary of the

mosque in Cordova are not of dark marble, but consist of four layers of thin red bricks. The pierced marble screen in the interior of the Taj Mahal surrounds cenotaphs, not the sarcophagi, which are in a crypt below. Persian tile makers have made ceramic revetements for Turkish mosques, and it might be that in rare cases tiles or mihrabs in them were made in Persia. The vast majority of them were certainly fabricated in Turkey and with Turkish patterns. The words for Ḳā'it Bey (p. 99) dīvān-i-āmm and dīvān-i-khāss (p. 205) are misspelled, while for maḳṣūra and the mosque Nūr-i-Osmānīye an unnecessary French spelling for the long *u* has been used.

In the analysis of the Muslim religion, some incorrect ideas have crept in. Islam did not have "its own system of carefully guarded priesthood," nor could one call the muezzin a "priest." At the end of page 195 "Arabs" would have been more specific than "Mohammadans."

The choice of illustrations is also not well balanced. There are too many illustrations of late buildings, whereas the more important eleventh and twelfth centuries are practically omitted. We thus find only a photograph of the eighteenth-century Madrasa Mādar-i-Shah but no Seljuk dome. The cut of the colonnade in the "Court of the Lions" in the Alhambra seems to have been made from a technically poor photograph in which part of the scenery is overexposed.

The reviewer regrets to have had to enumerate these flaws, a procedure which might convey an unfriendly attitude and a certain amount of petty-minded harshness. This is, however, not intended. The above statements were only made to help improve this textbook for our schools when a new revised edition of *Architecture Through the Ages* is brought out.

Richard Ettinghausen

IN MEMORIAM

SIR E. DENISON ROSS, R. L. HOBSON, OSCAR RAPHAEL

SINCE THE OUTBREAK OF WAR IN 1939 A WHOLE GENERATION OF ORIENTALISTS IN ENGLAND seems to have passed away with the close of an epoch in which they had done their work and made their mark. First to leave the field of Eastern art was the veteran George Eumorfopoulos whose death has already been reported in *Ars Islamica*. The year 1940 brought the death of Sir Denison Ross and 1941 the deaths of R. L. Hobson and Oscar Raphael. This is not the place to estimate what their loss means to their many friends; nor can we be concerned here to take account of all their activities, even as scholars or collectors, but only to commemorate their work for Islamic art and to recall what the withdrawal of their personalities means for students of this subject.

The three men shared a liberal outlook and a fearless and downright expression, though they were in other ways complementary to one another in their gifts. As linguist, scholar, or collector each took a large share in organizing those exhibitions and presiding at those lectures which have done so much to widen the appreciation of oriental art in England in the thirty years before the war.

Denison Ross had a remarkable flare for languages, but his greatest gift, it may be hazarded, was his zest. He was of the company of those forceful pioneers, explorers, and discoverers in various fields, who have led full lives. He was the driving force behind many projects and is not likely to be forgotten as the first director, from 1916 to 1937, of the London School of Oriental Studies; but, quick and eloquent as he was in debate and speech, his personality was more fully revealed in private. There must be a great many students who owe a debt to the forces he was able to bring to so many subjects from the range of his knowledge, which the fire of his enthusiasm opened to them. It was his weakness as well as his strength that his hands were never too full for him to take on something else if he saw it was worth doing. As a scholar his most valuable work was done in the editing of historical texts. He was not, and made no claim to be, a scholar of the order of Edward G. Browne (whose *Year Amongst the Persians* Ross republished in 1926 with a characteristic tribute to the author), but he followed him with the same broad sympathy and enthusiasm for Persian culture. He had not a specialized knowledge in any field of Islamic visual art, but his wide experience of Iran and of her literature and history, as well as of the Mongols and Turks of Central Asia and India, gave him insight into the springs of Iranian culture and of the art of the Mughals in India. He was well suited to contribute to such an undertaking as the *Cambridge History of India*.

Too often the linguist has no care for art or understanding of it. Ross was not so inhuman; as a historian he made all culture his field, though his first interest was in language and poetry. It was appropriate that he, a Professor of Persian in London University, should become one of the editors of the *Survey of Persian Art;* but, more than that, it was largely due to him that its publication was undertaken by the Oxford University Press. In the

counsels of the Royal Central Asian Society and of the Iran Society he was a prime mover, but probably no activity gave him greater pleasure than editing the "Broadway Travelers" series in which he was solely responsible for the oriental material and himself undertook the volume on the Sherley brothers. Here all his gifts as a linguist and historian, combined with a sympathy for a life which he himself might have lived in another age, came into play. He used his gift of tongues above all for the promotion of a better understanding between his own country and the peoples of the East, and he was happy to be called so soon from his retirement to undertake national work. He died in harness, as he would have wished, in Turkey. He was a powerful defender of a life of scholarship and research and generous in his aid to scholars, especially to the young.

Oscar Raphael had the opportunity to travel often and widely, and he made friends wherever he went, so that he became a center of contacts with many countries, not only for himself but for his friends, who were thus able to keep in touch with activities in the study of Eastern art all over the world. He was a born collector, and as a schoolboy was interested in Egyptology and fossils; but he did not turn seriously to Islamic art until after the last war, when Near Eastern pottery began to appear on the Paris and London markets. Successive visits to the Near East in 1923, 1924, 1928, and 1932 took him through Egypt, Palestine, Syria, and Turkey—a stage nearer the source. His experience of Far Eastern ceramics gave him confidence in this new and uncharted field, so that at his death his collection included a number of key pieces for the study of this subject. It does not, of course, rival in importance his Chinese collections, but anyone who had seen the Islamic pottery displayed in his London flat will have an impression of the place of honor given to it, and of the distinction with which it filled the place with its romantic richness of color.

Not that Raphael was only an aesthetic collector: he always gave weight to the claims of scholarship and supported with his interest and money scientific excavations in Syria, Palestine, and Mesopotamia carried out by Sir Leonard Wooley and others. In forming his own collection he sought for documentary pieces as well as those of aesthetic excellence; and dated examples were especially valued. He was always sympathetic to requests for loans to exhibitions both in England and abroad, but he was happiest in showing his possessions in his home to students and lovers of art. It is characteristic of his great generosity that he should have left the whole of his collections to be divided between the British Museum and the Fitzwilliam Museum, Cambridge, where he was Honorary Curator of Oriental Art. The division is to be made in accordance with the character and needs of the two museums, and this means that of the Near Eastern pottery the bulk will go to Cambridge, while the British Museum receives several famous pieces including the Samarkand bowl, with eyes, from the Doucet collection (*Survey,* Pl. 561 B) and the dated Rayy bowl of 583 H. (1187 A.D.) published by Dr. R. Ettinghausen in *Ars Islamica* (II [1935], Figs. 1 and 2) and reproduced in the *Survey of Persian Art* (Pl. 688) as a Sāva piece.

Raphael only published a few papers in the *Transactions of the Oriental Ceramic Society* and of the Japan Society of London, and a large part of his collections remains unpublished.

They were built up with enthusiasm and a faith in his eye which made him ready to launch out into fresh fields, and also to hold to lines which had become unpopular, as with his Japanese collections. He will be widely missed and especially at the British Museum where he was a voluntary worker for many years—arriving every morning that he was in London and lending a hand to Hobson in the arranging of cases, and exchanging with him information and opinions. He survived Hobson only by three months, and this second loss, so unexpected, was a heavy blow to the Department of Oriental Antiquities.

Though Raphael traveled extensively, Hobson by reason of his magisterial publications on ceramics, made throughout a generation, is known far more widely, and his name is not likely to be forgotten. His qualities of mind were admirably suited to the highly necessary task of putting in order the subject to which he devoted his working hours. His piercing eye and vigorously exacting judgment were turned first on European, then on Chinese, and finally on Near Eastern pottery and porcelain. The confusions of oriental terminology and falsification and the pretensions and skepticism of the early western publicists were dissolved and unraveled by his patient and ruthless researches, always carried out with the product of the kiln in his hands as the touchstone of the written evidence. Though he lacked personal experience in the archaeological field, his wide and rare knowledge of the existing corpus of material led archaeologists of all countries, eastern as well as western, to bring the fruits of their digging to his notice. He welcomed each discovery that threw light on the dark places of the subject. In his farewell address to the Oriental Ceramic Society in 1939 he surveyed the progress that he had seen in Far Eastern ceramic studies. It is a pity that he did not do the same for the Near East, but his review in the *Burlington Magazine* of the section of the *Survey of Persian Art* dealing with ceramics (which was his last published work) goes some way to estimating the position then reached. His own charting of the established facts is contained in his *Guide to the Near Eastern Pottery and Porcelain in the British Museum,* published in 1932. It is hoped to publish a full bibliography of his writings on ceramics. In it the Near East will not make a big show; but among the collections which he built up during the seventeen years of his keepership at the British Museum, his additions to the Islamic pottery are not unimportant, and represent the constant effort on his part to make them as representative historically as was possible under the existing conditions, which he was the first to deplore. He did not live to see the fruits of scientific excavation in Persia, but his treatment of the Chinese material is an example to those who will have the ordering of this field in the future. His last years were clouded by a painful illness and increasing weakness so that no one would have wished the end delayed. It may justly be said of him that he adorned his subject.

Basil Gray

ERNST COHN-WIENER
1882–1941

THE NAME OF ERNST COHN-WIENER WILL ALWAYS BE CONNECTED WITH HIS SUCCESSFUL travels to western Turkestan. In 1924 and again in 1925, accompanied by his wife, he visited this little explored part of Central Asia and brought back many photographs and a large amount of information, most of which was incorporated in his outstanding work *Turan, Islamische Baukunst in Mittelasien* (Berlin, 1930). As he was able to visit not only Bukhara and Samarkand, but also lesser known places of historic importance such as Shahr-i-Sabz, Merv, Anau, Uzkand, and Kasan, he discovered many unknown architectural monuments of great interest. Because of the newness and the variety of material presented in his book and the technical excellence of its plates, it was at once recognized as an important contribution in the field of Islamic architecture. As his publication did not include all the photographic material which he had brought back, he was able to supplement it with a number of articles during the last ten years, one of them published in *Ars Islamica*. During his trips he also collected specimens of archaeological material, especially of shards of Samanid pottery, which are now in the Islamische Abteilung of the Staatliche Museen at Berlin. These manifold results of Dr. Cohn-Wiener's two trips—they lasted only five and six months each—are, however, not only evidence of his ability, but also proof of the scholarly interests of governmental agencies in the turbulent early history of the German Republic and of the co-operation of the Soviet Union. In addition to his book on the architecture of Turkestan, Dr. Cohn-Wiener published also two surveys of the arts of Asia, one dealing with the minor arts (*Das Kunstgewerbe des Ostens. Geschichte, Stile, Technik* [Berlin, 1923]), and the other with the art of Asia in general (*Asia, Einführung in die Kunst des Ostens* [Berlin, 1929]).

In spite of this interest in the art world of Asia and especially of Islam, his training and main professional work were in different fields. He started his career with a doctoral thesis on medieval miniatures and throughout his life he continued to work and publish on Western medieval and modern art. He gained a special reputation through his work in adult education, a field he entered in the year 1908, when he was appointed lecturer at the Freie Hochschule, Berlin. His ability was fully recognized when he was elected chairman of the faculty of the Humboldt Hochschule in 1926, a post which was equivalent to being president of that institution. He did much work by lecturing, often to large audiences, giving gallery talks, broadcasting, and publishing in the more popular magazines.

Dr. Cohn-Wiener's activities were suddenly cut short by his dismissal on racial grounds upon the arrival of the National Socialist government in Germany. He found, however, a new field of activities when early in 1934 he was appointed by the Maharaja of Baroda to the post of curator of the State Picture Gallery and in the following year was promoted to director of art of Baroda State. He could now devote his energy to the reorganization of the art school and to the collections of pictures and of Indian art. He also lectured for five semesters at Bombay University on the various phases of Oriental art. During his stay in India, he traveled

again extensively and collected new material, the publication of most of which was stopped by his premature death.

In 1939 another sudden change occurred in his life. The post of art director, together with other positions in Baroda State, was abolished for fiscal reasons. Dr. Cohn-Wiener then took up residence in the United States and lectured for the American Institute of Iranian Art and Archaeology.

The last years of Dr. Cohn-Wiener's life with its flight before barbaric persecution was symbolic of the sad state of intellectual status in this decade. It speaks for the sincerity of the late scholar's scientific endeavors that he tried to branch out into new fields even in the most difficult times of his wanderings and never gave up what he had found to be good, beautiful, and right. He kept this attitude until the end and died as a victim, even martyr, of a sad era.

RICHARD ETTINGHAUSEN

JOHN ELLERTON LODGE
1878–1942

TO THE ART WORLD AT LARGE, JOHN E. LODGE BELONGED TO THOSE FAR-SIGHTED MEN OF America and Europe who in their lifetime have pioneered in the endeavor to bring the ideas and arts of the Far East to the West. He fulfilled this aim mainly in his capacity as curator of Chinese and Japanese art at the Museum of Fine Arts in Boston, from 1910 to 1931, and as director of the Freer Gallery of Art in Washington, from 1920 to 1942. The monuments of his life's achievements are the magnificent works of art in Boston and, above all, in Washington, which his erudition, insight, and discerning eye had guided him to collect.

Less known, but in the same sense remarkable, was his work in the field of Near Eastern art. The Freer Gallery owned originally only a small nucleus of Islamic art, mainly pottery from Rayy and Rakka and miniatures which had been bought by Charles L. Freer as fruit of his travels between 1902 and 1912. From this start Mr. Lodge built up one of the finest collections of Near Eastern pottery and of Persian and Indian miniatures. He also rounded out the original range of the collection to include outstanding objects in other fields of Islamic decorative art, such as bookbinding, metal, glass, and woodwork. He supplemented it further by important works of art from the Coptic and Sasanian periods. Perhaps most significant was his insistence on collecting and displaying, on a large scale, the finest specimens of Arabic and Persian calligraphy which he, like the true Oriental, seemed to regard as the quintessence of Muslim art.

Guided by the artistic standards and technical finesse of the Far East, Mr. Lodge was satisfied only with the finest creations of the main periods. The Islamic section of the Freer Gallery was thus devoid of the cheap or fragmentary. There was no room for accidental, insignificant objects, which might have tickled the archeological instincts of the scholar or might

have catered to the curiosity or sensibilities of the layman. His constant aim was to keep his standards as high and uncompromising as possible, and thus he gave the Near Eastern collection a unique position among museums.

Mr. Lodge not only collected these objects, but he was also eager to put them at the disposal of the student. Every inquiry for documentary material or a request for a photograph to be made under exacting conditions was fulfilled in the most courteous, exemplary fashion. As the Islamic collection is, however, still fairly new and comparatively little known, the impact on scholarship of this outstanding museum will be even more forceful later on, as its research possibilities become better known. There is no doubt that the results of Mr. Lodge's work will come to final fruition in future decades, and then his efforts on behalf of Near Eastern art will be universally recognized and admired.

Those who met John E. Lodge will remember him as a true gentleman and scholar, restrained yet forceful and forthright in his comments, able, specific, and direct in his judgment, and at the same time kind,courteous, and ready with a delightful word of humor. *Ars Islamica,* on whose consultative committee he gladly and effectively served, loses a good friend and adviser, whom we shall sadly miss.

Richard Ettinghausen

SMITHSONIAN LIBRARIES
3 9088 01831 2454